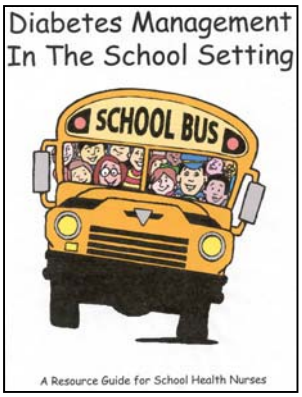

"Diabetes Management in the School Setting" Manual Updates

This packet contains updates for the "Diabetes Management in the School Setting" manual. Please insert updates as follows:

- Replace the old Table of Contents with the new one.
- Replace the old Special Acknowledgments (pages II-III) with the new ones.
- Remove the old unnumbered pages between pages 16 and 22 and replace with the newly numbered pages 17-21.
- Replace the old pages 22-25 with the new ones.
- Remove the old unnumbered pages between pages 28 and 52 and replace with the newly numbered pages 29-51.
- Insert the new pages 86a-86d between the old pages 86 and 87.
- Replace the old pages 93-94 with the new ones.
- Remove the old page 95 and replace with new pages 95-95a.
- Remove the old pages 96-97 and replace with the new pages 96-97.
- Replace the old References index tab (pages 109-110) with the new one.
- Replace the old pages 111-114 with the new ones.
- Replace the old page 130 with the new one.
- Insert the Health Management index tab and pages 133-137 after page 130.

Page 130 is a product survey form. If you haven't already completed this form, we ask you to take a few moments to complete this form and return as noted. This information will be very helpful to us in future revisions and training opportunities.

The enclosed manual updates are also available in electronic format via our school manual web page at http://www.dhss.state.mo.us/diabetes/manual/manual.htm. The updates can be downloaded or printed from the web page as one complete file. The updates have also been incorporated into the appropriate manual sections on the web page.

If you have questions regarding the enclosed school manual updates or need a copy of the original school manual, please contact Diane C. Rackers at the Missouri Diabetes Prevention and Control Program at (573) 522-2873 or racked@dhss.mo.gov.

See the other side for additional diabetes school resources.

Diabetes
Missouri Department of Health & Senior Services
Chronic Disease Control

Additional Diabetes School Resources:

The National Diabetes Education Program (NDEP) has also developed and released a school guide, "Helping the Student with Diabetes Succeed: A Guide for School Personnel." The school guide is available in PDF format at http://ndep.nih.gov/materials/pubs/schoolguide.pdf. Single copies of the school guide are available for free from NDIC at (301) 634-0716 or via the order form on the NDEP website.

NDEP has also developed a web page for school personnel. The above-mentioned school guide can be accessed on this web page in addition to numerous other resources and web links that are helpful to school staff working with children with diabetes in the school setting. This web page can be accessed at http://ndep.nih.gov/resources/school.htm.

The American Diabetes Association has developed a curriculum that can act as a companion to the NDEP School Guide: "Diabetes Care Tasks at School: What Key Personnel Need to Know." This modular curriculum can be found at http://www.diabetes.org/schooltraining.

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Emergency Action Plan(s) – Index

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Special Acknowledgement

We would like to thank the following for their dedication and hard work on the "Diabetes Management in the School Setting" manual. These individuals have given of their time and expertise to provide a key resource for health care professionals who work with children and adolescents with diabetes in Missouri's schools.

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Individualized Health Plan (IHP) Sample

Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
Student has frequent hypoglycemic and/or hyperglycemic events. Student has irregular blood glucose monitoring	Physiological injury due to development of acute complications related to hypoglycemic or ketoacidosis (NANDA 1.6.1) (Taxonomy II NANDA code 00035)	Student (parent) will recognize and treat early signs of insulin shock appropriately and know how to recognize and respond to early signs of ketoacidosis.	Interview student to determine typical low blood sugar symptoms. Evaluate if student understands his/her reaction symptoms in early stages.	The student will be successful in diabetes management in the school setting. The student will manage or have assistance managing low blood sugar episodes.
Student has frequent infections			Monitor blood glucose testing and recording, instruct and reinforce skills PRN.	The student will not experience ketoacidosis.
Student is skipping recommended snacks.			Instruct student in pathophysiology of diabetes at level the student is capable of understanding (age and development appropriate).	The student will perform or have assistance performing blood glucose tests.
			Monitor insulin administration if given at school. Instruct and reinforce skills PRN. Monitor diet adherence, reinforce and instruct PRN. Monitor snack supply.	The student will maintain blood sugar within acceptable range.

Igoe, J., ed. *The School Nurse's Source Book of Individualized Healthcare Plans Volume1*. North Branch, MN, 1993. A complete care plan is available from Sunrise River Press, 39966 Grand Avenue, North Branch, MN 55056, 800-895-4585.
NANDA Nursing Diagnoses: Definitions and Classifications (2001-2002). North American Nursing Diagnosis Association, Philadelphia. Gordon M, Avant K, Herdman H, Hoskins L, Lavin MA, Sparks S, Warren J, Editorial Committee.

Individualized Health Plan (IHP) Sample

Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
			Instruct student in meaning of glucose levels and appropriate action required at levels 40-300.	
			Arrange space and time for student to perform self-care activities. Assess student and teacher(s) level of understanding diabetes. Instruct PRN at appropriate level of understanding.	
			Instruct student and teacher(s) in what to do when early low blood sugar symptoms begin.	
			Develop individual emergency plan for (with) student and share with faculty (including plan for administration of glucagons PRN).	
			Support student and family in adaptation to diabetes.	

Igoe, J., ed. *The School Nurse's Source Book of Individualized Healthcare Plans Volume1*. North Branch, MN, 1993. A complete care plan is available from Sunrise River Press, 39966 Grand Avenue, North Branch, MN 55056, 800-895-4585.
NANDA Nursing Diagnoses: Definitions and Classifications (2001-2002). North American Nursing Diagnosis Association, Philadelphia. Gordon M, Avant K, Herdman H, Hoskins L, Lavin MA, Sparks S, Warren J, Editorial Committee.

Individualized Health Plan (IHP) Sample

Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
Student displays lack of knowledge regarding medication, diet, blood sugar monitoring and exercise.	Knowledge deficit related to: oral hypoglycemic medication, insulin administration, dietary regimen, exercise requirements, blood sugar monitoring and/or balance of insulin, diet and exercise. (NANDA 8.1.1) (Taxonomy II NANDA code 000126)	Student will increase understanding of pathophysiology of diabetes and develop or improve the skills necessary to manage self.	Instruct student in pathophysiology of diabetes at level the student is capable of understanding (age and development appropriate).	The student will be successful in diabetes management in the school setting.
			Monitor insulin administration if given at school. Instruct and reinforce skills PRN.	The student will demonstrate increased knowledge and skill in medication management.
			Monitor diet adherence, reinforce and instruct PRN.	The student will demonstrate increased knowledge and skill in diet management.
			Instruct student in weight management, monitor weight regularly with student.	

Igoe, J., ed. *The School Nurse's Source Book of Individualized Healthcare Plans Volume1*. North Branch, MN, 1993. A complete care plan is available from Sunrise River Press, 39966 Grand Avenue, North Branch, MN 55056, 800-895-4585.
NANDA Nursing Diagnoses: Definitions and Classifications (2001-2002). North American Nursing Diagnosis Association, Philadelphia. Gordon M, Avant K, Herdman H, Hoskins L, Lavin MA, Sparks S, Warren J, Editorial Committee.

Individualized Health Plan (IHP) Sample

Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes
			Instruct student in meaning of glucose levels and appropriate action required at levels 40-300.	The student will perform or have assistance performing blood glucose tests.
			Arrange space and time for student to perform self-care activities.	
			Provide reinforcement and praise follow-through for self-management abilities.	

Igoe, J., ed. *The School Nurse's Source Book of Individualized Healthcare Plans Volume1*. North Branch, MN, 1993. A complete care plan is available from Sunrise River Press, 39966 Grand Avenue, North Branch, MN 55056, 800-895-4585.
NANDA Nursing Diagnoses: Definitions and Classifications (2001-2002). North American Nursing Diagnosis Association, Philadelphia. Gordon M, Avant K, Herdman H, Hoskins L, Lavin MA, Sparks S, Warren J, Editorial Committee.

Individualized Health Plan (IHP) Form

Assessment Data	Nursing Diagnosis	Goals	Nursing Interventions	Expected Outcomes

Special Health Care Needs: Administrative Guidelines

INTRODUCTION

The demand for school nursing services has increased in recent years because of increasing numbers of students with special health care needs. This influx has occurred, in part, due to the following changes:

- Advanced medical technology has led to improved survival rates and longer life spans of children with special health care needs.
- Hospitals are discharging children earlier to home and to school while they are still receiving treatment.
- There is a growing trend toward placement of children with severe disabilities in integrated community settings, including their homes or specialized foster parent homes, rather than in institutions.

As a result, special procedures requiring nursing skills such as suctioning trache-ostomies, catheterizations, and others are now being requested in the schools—an educational setting, not a medical setting.

These trends are supported by federal statutes, which pertain to the treatment of children with disabilities. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination against children with handicapping conditions, or children who are regarded as handicapped, by recipients of federal funds. School districts must make reasonable accommodations to make their programs and services available to such children. Section 504 provisions are important because the definitions of children with handicapping conditions is broader than the definition of such children under Public Law 94-142, now known as Individuals with Disabilities Education Act (IDEA). Thus, a child may be eligible for certain services under Section 504, but not be eligible for special education under IDEA. Section 504 does not require an Individual Education Program (IEP) but does require a written plan. (See Appendix F.1 for *Sample Accommodation Form* on page 40.) It is recommended that the district document that a group of individuals familiar with the student's needs met and identified the needed services.

IDEA is the second federal statute that pertains to the issue of school health services. This statute requires local school districts to provide a "free appropriate public education" for eligible children through the provision of special education and related services. Related services have been defined by regulation and by court decisions to include school health services. Criteria for required services include:

1. Can be learned in a reasonable amount of time.
2. Should not require the presence of a physician, medical judgment from extensive medical training, or an undue amount of time to perform.
3. Must be provided or performed during the school day for the pupil to attend school or benefit from his/her educational program.
4. Must be ordered by a licensed physician or surgeon.

The variety of procedures described in these guidelines would clearly be included in the definition of school health services under IDEA; and therefore, may be the responsibility of school districts to provide when they are determined to be necessary for a child with a disability to benefit from the special education program, as determined by the Individual Education Program (IEP).

Quality health care is in the best interest and safety of the students and supports the optimal educational experience. This health care is best provided in the school through assessment, planning and monitoring by a registered nurse, in collaboration with the student's primary physician. Districts enrolling students with complex medical conditions must have access to this type of health care management in order to safely provide for the student's special needs.

Purpose

These administrative guidelines have been developed in order to assist school districts who serve students with complex medical conditions in making informed decisions regarding the delivery of health services at the school. Students with complex medical conditions may be medically unstable, have unpredictable responses to medication or treatment, may need care requiring professional judgment to modify a necessary procedure, or require medication at school. This type of care should be managed by a registered nurse and may include activities that cannot be delegated. Students with non-complex medical conditions may require procedures that can be performed safely as outlined in specific procedural guidelines, with no need for alterations requiring medical judgment. This type of care could be delegated to properly trained personnel. (See Appendix C.1 for the *National Association of School Nurses Position Statement on Case Management of Children With Special Health Care Needs* on pages 29-30 and Appendix C.2 for the *National Association of School Nurses Position Statement on School Nurse Role in Care and Management of the Child With Diabetes in the School Setting* on pages 31-32.)

Determination of Services Required

Districts without school nursing services should consider contracting with the local community health nurse to provide assessment, determine required services, and identify who can safely provide the care. This determination is based on the nurse's evaluation of a number of variables specific to each student. These variables include, but are not limited to:

- Number of medications, action, dosage, side effects of each drug, and route of administration.
- Utilization of medication on an as-needed basis (PRN).
- Nature, frequency, and complexity of prescribed treatments the student requires and the assessment needed for PRN treatments.
- Complexity and acuteness of the observations and judgments the caregiver must make.
- Stability of the student's medical condition, i.e., can the student's condition change dramatically to life threatening within a few seconds/minutes?
- Current specialized knowledge base and proficiency of psychomotor skill required by the proposed caregiver.
- Specific student's ability to communicate his/her needs to the caregiver.
- Level of preparation and experience of the designated direct caregiver.

Identification of Care Providers

A *Technical Skills Chart* (See Appendix F.2 on pages 41a-h) will assist school districts in clarifying the roles of the school nurse and other school personnel who might be directly involved in providing the health care requested in the school setting.

School districts without the services of a registered nurse should use the Technical Skills Chart in determining what additional personnel would be needed to safely provide for the care of a student with special needs. Special care procedures also include the administration of medication. Factors to be considered when determining who can safely provide these services include:

- Stability of student's condition.
- Complexity of task.
- Level of judgment and skill needed to safely alter the standard procedure in accordance with the needs of the student.
- Level of judgment required to determine how to proceed from one step to the next.

Competencies of Personnel

The registered nurse should take the responsibility to determine who is competent to provide needed care. See Appendix F.3 on pages 42-43 for a description of the competencies recommended for different levels of personnel. The delegation and supervision by registered nurses of unlicensed assistive personnel (UAP) assisting with the student's care is a major concern and is controlled by the Missouri State Board of Nursing and the Board of Healing Arts. The Technical Skills Chart indicates those procedures which should never be delegated. The registered nurse, by law, can perform those procedures for which she has the skill and education. In some of the more complex tasks, there will need to be training for the registered nurse provided by a physician, clinical nurse specialist from the tertiary care center, and parents/guardian. Parent(s)/guardian(s) have learned to perform the procedures required by their child and take the responsibility for their care 24 hours a day. They should be involved in the selection and training of school personnel to whom this care is delegated, indicate that they understand who will perform the procedure and be satisfied with the mastery of the care provider. (See Appendix C.3 for the *National Association of School Nurses Position Statement on Using Assistive Personnel in School Health Services Programs* on pages 33-34, Appendix C. 4 for the *Missouri State Board of Nursing Position Statement on Utilization of Unlicensed Health Care Personnel* on page 35, Appendix C.5 for *The National Association of State School Nurse Consultants, Inc. Position Statement on Delegation of School Health Services* on pages 36-37 and Appendix C.6 for the *National Association of School Nurses Position Statement on Delegation* on pages 38-39.)

Documentation of Plan of Care

It is essential to have a "Health Care Plan" for students with significant special needs. (See Appendix F.4 for a *Sample Individualized Health Care Action Form* on pages 44a-d) This plan serves as a written agreement with the student's parent(s)/guardian(s), health care provider, and school personnel and outlines how the district intends to meet the student's health care needs. This plan is different from the Individualized Health Care Plan designed for nursing intervention. The Action Plan provides for effective and efficient planning and protects both the student and

school personnel. Components of the Health Care Action Plan should include:

- Pertinent information about the student, i.e., names of parent(s)/guardian(s), addresses and phone number(s).
- List of key personnel, both primary care providers and school personnel.
- Emergency information.
- Emergency plan (potential child-specific emergencies).
- Background information, i.e., medical history, summary of home assessment, self care, family and life style factors, baseline health status, required medications and diet, and transportation needs.
- Licensed health care provider's order for medications, treatments or procedures.
- Parent(s)/guardian(s) authorization for specialized health care.
- Plan for specific procedures, with list of possible problems.
- Daily log for procedures.
- Documentation of training, if procedures are delegated.

Students who are in special education and have an IEP should have their Health Care Action Plan referenced in the IEP, and components may be incorporated in the IEP if there are services or learning needs that are appropriate for inclusion.

Emergency Plan

The needs of a technology-dependent child may require that written protocols be developed to address possible medical emergencies the student may experience while in the school setting. These protocols will be part of the Health Care Action Plan. The protocols would include:

- Definition of a medical emergency for this child.
- List of individuals to be notified when the emergency occurs.
- Identification of person who will initiate and direct the action to be taken.
- Specific action to be taken in this emergency.
- Transportation procedures.

These student-specific emergency plans should be shared with teaching staff and other school personnel, including ancillary staff such as cafeteria workers, custodians, and bus drivers. (See Appendix F.5 for *Sample Emergency Plan Form* on page 45). If the student is transported, specific training and plans should be provided to bus driver (See Appendix F.6 for *Sample Transportation Plan for Student With Special Health Care Needs* on pages 46-47).

Appendix C.1

National Association of School Nurses

Position Statement

Case Management of Children With Special Health Care Needs

HISTORY:

Both the historic and contemporary role of the school nurse has included case management for children with special health needs. Delivery of health care in the school setting requires the coordination of multiple health and non-health related services. The school nurse has the knowledge, skills, judgment, and critical thinking inherent in nursing education and authorized through nursing licensure to perform efficiently in the role as case manager.

DESCRIPTION OF ISSUE:

In 1975, legislation was passed that mandated all children, including those with special health care needs, be educated with their peers. Since then, children with more and more complex health care needs have been attending schools throughout the United States (Gelfman, 2001; Gelfman & Schwab, 2001). A partnership among health care providers, students, their families and the school system is essential to provide a smooth transition from home or hospital to school. To enhance this collaborative effort, it is essential for a school-based care manager to oversee the care provided on a case-by-case basis. The school nurse is the logical person to provide this oversight in the school setting, ensuring that the student has access to optimal health and educational success.

RATIONALE:

Case management is intrinsic to the school nurse's job. School nurses function in the roles of community liaison, health and illness information interpreter to school personnel, direct and indirect care provider, student advocate, and educator to students, families, and school personnel. The school nurse is often the only person in the school setting with medical knowledge about the implications of a child's health status, knowledge of existing health care resources in the community, and understanding of how to access needed health services. The school nurse also has knowledge about the school environment and its potential barriers and facilitators to delivering health services and the provision for optimal educational opportunities.

CONCLUSION:

Case management of children with special health care needs involves various activities designed to ensure the health and educational success of the child at school. It is the position of the National Association of School Nurses that the school nurse has the knowledge, experience and authority to be the case manager for children with special health care needs. This includes, but is not limited to, the following:

- Being knowledgeable about the services needed by students with special health care needs after collaboration with the student, family and health care provider
- Being knowledgeable about services available in the community and assisting families in obtaining needed services
- Screening for students who would qualify and benefit from case management services for their health care needs
- Providing leadership in interdisciplinary team meetings to assist in planning needed services to meet the health and educational needs of the students
- Implementing the health team's plan of care, by providing either direct or indirect care
- Coordinating continuity of care between home and the school

- Monitoring and evaluating interventions and implementation of the health care plan
- Monitoring and evaluating progress toward identified health and educational goals
- Training, monitoring, and evaluating personnel delegated to perform specific nursing care

A case management team is essential in ensuring care is provided in a coordinated and effective manner for students with special health care needs. The school nurse must assume the leadership position as case manager in this process. The school nurse, in the role of case manager, provides oversight of care and services and serves as the point of contact for communication among the student, family, school staff, and health care provider.

Reference/Resources:

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7. Perry, C.S. & Toole, K.A. (2000). Health service applications: Impact of school nurse case management on asthma control in school-aged children. Journal of School Health, 70(7), 303-304.
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Adopted: June 1995
Revised: October 2002

Appendix C.2

National Association of School Nurses

Position Statement

School Nurse Role in Care and Management of the Child With Diabetes in the School Setting

HISTORY:

Diabetes is a common chronic disease of childhood, and most children with diabetes attend school and/or daycare. About 1.7 per 1000 children under age 20 have type 1 diabetes; and about 13,000 new cases of type 1 are diagnosed annually. In addition, children are now being diagnosed with type 2 diabetes, a disease once found only among adults. The reasons for this alarming increase appear to be linked to the rise in childhood obesity and the decline in physical activity. Still, not all people with type 2 diabetes are overweight. At risk populations for type 2 diabetes include African Americans, Native Americans, Hispanic Americans, and Asian Americans.

DESCRIPTION OF ISSUE:

Each student with diabetes is unique in regard to his or her disease process, developmental and intellectual abilities, and levels of assistance required for disease management. Schools must ensure full participation in academics and provide a safe environment for all students. The student with diabetes presents several variables that could be barriers to full participation if not fully addressed.

The goal of diabetes medical management is to maintain blood glucose levels at or near normal range. Poor or insufficient medical management of diabetes allows fluctuating levels of blood glucose. This fluctuation can lead to immediate consequences in the classroom as well as long-term complications such as damage to the eyes, kidneys, nerves, gums, and blood vessels. Low glucose levels can cause immediate concern with symptoms of pallor, diaphoresis, and a decrease in cognition. If not treated immediately low glucose levels can progress to unconsciousness and death. Despite a quick and favorable response to treatment for a low glucose episode, cognitive ability can remain impaired for several hours. High glucose levels may also present a medical risk to students in the school setting.

To achieve the goal of optimal diabetes medical management the student may need access to a variety of diabetes supplies and may need to perform multiple tasks during the school day. Management strategies for a student with diabetes should be developed considering the knowledge base of the student, developmentally appropriate tasks, the availability of professional staff, and the logistics of the school building. In addition, the student must have access to glucose monitoring equipment, oral or injectable medications including insulin and glucagon, nutritional supplements such as snacks and a fast acting source of glucose, knowledge of the equipment used in their diabetes management (syringes, insulin pen, insulin pump, etc.), a documentation system for blood glucose readings and insulin dosage, and access to a bathroom. A goal of allowing the student to self-manage his or her disease following an individually prescribed regimen in a seamless unrestricted fashion between home and schools is critical to maintaining near normal blood glucose levels.

Knowledgeable personnel must be available at all times including during extra curricular activities and field trips to assist students in managing their diabetes and to respond to emergencies. By having personnel available, medical, academic, and/or behavioral consequences of poor blood glucose control evident in the classroom as well as long-term health effects can be minimized or avoided.

RATIONALE:

Both high and low blood glucose levels affect the student's ability to learn and endanger the student's health. Glucose levels should be as close to the desired range as possible for optimal learning and testing of academic skills. Recent research indicates that maintaining the glucose levels within a narrow range can prevent, reduce, and/or reverse long-term complications of diabetes. The school nurse, as a skilled professional, is in a unique position to provide early identification of children who exhibit symptoms of diabetes and initiate the referral process.

Managing diabetes at school is most effective when the entire school community is involved – school nurses, teachers, counselors, coaches, parents, medical home, and students. The school nurse can provide the coordination needed to elicit cooperation from the school community in assisting the student with diabetes toward self-management of diabetes. The school nurse can be instrumental in preventing and managing emergency conditions that can result from glucose fluctuations by instructing the entire school team on basic diabetes information and management. Emergency conditions are not necessarily the result of a lack of management. Factors such as illness, hormones, or stress may cause a student who closely follows a prescribed regimen to experience an emergency situation. The student with diabetes requires the professional supervision of the school nurse to enhance their self-care skills.

CONCLUSION:

It is the position of the National Association of School Nurses that school nurses have the professional skills needed to assess and support the child with diabetes in the school setting. School nurses are uniquely prepared to provide information to the multidisciplinary team to develop a 504 Plan or Individual Education Plan/Individual Family Service Plan (IEP/IFSP). The school nurse is the key person to implement this plan. While a 504 or IEP/ IFSP diabetes health plan may take into consideration management strategies preferred by the student, their family and medical home, it must also conform to state and federal guidelines, as well as the state nurse practice act and the related rules for delegation.

Further, it is the position of the National Association of School Nurses that schools have a basic duty to ensure that the medical needs of students are addressed in the school setting. Under the direction of the school nurse, management strategies may be incorporated in a seamless fashion between home and classroom to help the student with diabetes stay healthy, be academically focused and participate in all desired academic and extra curricular activities.

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Adopted: November 2001

Appendix C.3

National Association of School Nurses

Position Statement

Using Assistive Personnel in School Health Services Programs

HISTORY:

The health-related needs of students are intensifying in our nation's schools. Student safety is the primary concern in determining whether or how assistants should be used to help professional school nurses to deliver increasingly needed health services to students.

DESCRIPTION OF ISSUE:

Assistive personnel serve as school nurse extenders by supporting the nurse in the health office, performing clerical functions, and carrying out certain delegated nursing activities on behalf of students. State Nurse Practice Acts and regulations promulgated pursuant to practice acts determine the scope of nursing practice and what nursing activities can be delegated or given to assistive personnel. People employed by the school district may have partial or total responsibility for assisting licensed, registered professional school nurses. These support staff include: unlicensed assistive personnel (UAP), such as school staff, clerical aides, and health/nursing assistants or aides (HA); licensed paraprofessionals, known as licensed practical nurses (LPN) or licensed vocational nurses (LVN); and registered nurses (RN) who do not meet their state's or school district's requirements for qualification as a school nurse. Each type of support staff has unique qualities and limitations as described below:

1. School staff whose job is to deliver, support, or manage education are the least qualified to assist the school nurse in providing physical health care to students. They lack health-specific training, and their job focus may not allow them to devote the care and attention needed to safely deliver health services.
2. Clerical aides who only provide clerical support to the health services program should not be expected to provide direct student health care. They require supervision by the school nurse; and in addition to general clerical training, they will need on-the-job training in such areas as school records management and confidentiality.
3. HAs, at minimum, should have a high school diploma, current certification in CPR and first aid, and on-the-job-training in such subjects as confidentiality and infection control. If the state requires a specified curriculum or certification for nursing/health assistants, HAs in schools must also meet these state regulations. Under virtually all state nurse practice acts, RNs are responsible for directing, delegating to, and supervising these UAPs.
4. LPNs and LVNs usually complete a 12-month course of study beyond high school and pass state licensure, which allows them to practice on a technical level of nursing. LPNs and LVNs can contribute to each step of the nursing process, but cannot independently assess the health status of any student or the student's environment, make a nursing diagnosis, develop the plan of care, or determine when delegation of care to a UAP is appropriate. They work in a team relationship with the registered professional school nurse. Although states may vary in both scope of practice and degree of supervision needed, virtually all state nurse practice acts require that a RN supervise these technical nurses.
5. RNs who do not meet the education and experience qualifications stipulated by the state's department of education or the school district to work as school nurses are nonetheless licensed by the state's board of nursing to practice nursing independently. The school nurse should be responsible for evaluating the outcomes of nursing services for all students, making suitable assignments to the RN, and providing supervision appropriate to the situation.

Key factors for effective and competent use of assistive personnel are role definition, adequacy of training, and appropriate delegation and supervision. School nurses, in collaboration with school and district administration, should develop clear, limited, written practice descriptions and then ensure adequate training and competency to perform identified tasks. Assistive personnel may not be required to make clinical assessments or nursing judgments or to implement nursing tasks requiring licensure. There should be written protocols for handling specific student health issues, with directions for particular signs and symptoms that must be reported to the school nurse. When the school nurse delegates responsibilities, the nurse must be available to provide direction,

supervision, and immediate intervention in a situation as needed. State law, regulations, standards, and rules set by state boards of nursing may determine whether off-site supervision of assistive personnel by RNs is an option. If state-permitted, the school nurse determines when off-site supervision is safe and how frequently on-site supervision is indicated.

It is important that the following issues are considered when using assistive personnel in schools:

- State nurse practice acts, including but not limited to scope of practice and to licensure, delegation, and supervisory responsibilities of RNs in relationship to LPN/LVNs and to certified or registered nursing assistants
- School nurse certification requirements under state education statutes and regulation
- Scope and standards of school nursing practice
- School district job descriptions that are legally appropriate to the level of preparation, expectations, and experience of the assistive personnel
- State and NASN staffing guidelines that consider various safe staffing mixes in relation to the health needs of the student population

RATIONALE:

The use of assistive personnel can extend the delivery of health services, but when used to replace professional health care providers, it leads to reduced quality of care to students. For staffing or budgetary reasons, assistive personnel are a necessary adjunct to many school health services programs; and if properly trained and supervised, they can enhance services to students and increase the cost-effectiveness of the program. Staffing decisions must be based on the assistive services needed, scope of practice, competencies, the RNs legal relationship to the assistant, and the amount of time required for on- and off-site supervision. Improved staffing of health services programs seems to result in healthier children who attend school and are more available for learning. While the use of assistive personnel may be an acceptable alternative to enhance this staffing, their improper use cannot only compromise students' quality of care, but also create liability for the district and/or nurse.

CONCLUSION:

It is the position of the National Association of School Nurses that the use of assistive personnel may be appropriate to supplement professional school nursing services in certain situations, but they should never supplant school nurses nor be permitted to practice nursing without a license. The professional school nurse should take the lead in helping school districts appropriately determine whether and how to use assistive health personnel. The school nurse is the only one who is trained and capable of assessing the health needs of the student population and the only one who can legally delegate nursing activities to unlicensed persons. Appropriate nurse to assistant ratios and on-site supervision are essential for ensuring safe delivery of nursing services to students.

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Appendix C.4

Missouri State Board of Nursing

Position Statement

Utilization Of Unlicensed Health Care Personnel

The mission of the Missouri State Board of Nursing is to assure safe and effective nursing care in the interest of public protection. The Board of Nursing has the legal responsibility to regulate nursing and provide guidance regarding the utilization of unlicensed health care personnel. The Board acknowledges that there is a need and a place for competent, appropriately supervised unlicensed health care personnel to assist, but not replace, licensed nurses.

Unlicensed health care personnel who perform specific nursing tasks without benefit of instruction, delegation, and supervision by licensed nurses may be engaged in the practice of nursing without a license. Such actions by unlicensed health care personnel are a violation of the Missouri Nursing Practice Act [335.066 (10), RSMo]. Unlicensed health care personnel remain personally accountable for their own actions.

The Missouri Board of Nursing recognizes that activities of unlicensed health care personnel need to be monitored to protect the health, welfare and safety of the public. Registered professional nurses may teach, delegate, and supervise licensed practical nurses and unlicensed health care personnel in the performance of certain nursing care tasks [335.016 (9)(e), RSMo; 4 CSR 200-5.010 Definitions]. Under the direction/supervision of registered professional nurses or persons licensed by a state regulatory board to prescribe medications and treatments, licensed practical nurses may teach, delegate, and supervise unlicensed health care personnel in the performance of specific nursing care tasks [335.016 (8), RSMo; 4 CSR 200-5.010 Definitions].

Registered professional nurses and licensed practical nurses must make reasonable and prudent judgements regarding the appropriateness of delegated selected nursing care tasks to unlicensed health care workers. Licensed nurses must ensure that unlicensed health care personnel have documented, demonstrated evidence of appropriate education, training, skills, and experience to accomplish the task safely. Carrying out responsible and accountable supervisory behavior after specific nursing tasks are delegated to unlicensed health care personnel is critical to the health, welfare, and safety of patients [335.016 (9)(e), RSMo; 4 CSR 200-5.010 Definitions]. Licensed nurses who delegate retain accountability for the tasks delegated.

To assist licensed nurses to competently perform critical processes involved in delegating, the Missouri State Board of Nursing subscribes to the use of the National Council of State Boards of Nursing's concept paper on delegation and delegation decision-making tree available at the National Council of State Boards of Nursing's web site address: http://www.ncsbn.org/public/regulation/delegation.htm.

Revised 3/3/99

Appendix C.5

The National Association of State School Nurse Consultants, Inc.

Position Statement

Delegation of School Health Services

POSITION

The National Association of State School Nurse Consultants (NASSNC) recognizes that:

- School nursing services are essential for the health, rehabilitation and well being of the student population in order for them to benefit from educational programs and to maximize energy for learning;
- Both the volume and range of nursing services that must be provided at schools has increased dramatically over the past decade.

As a result, certain aspects of student care may need to be delegated to licensed practical nurses (LPNs) or unlicensed assistive personnel (UAPs). In order to ensure quality and the safe provision of services as necessary for students with health and nursing care needs, NASSNC believes these services should either be directly provided by school nurses who are licensed registered nurses (RNs) and or delegated by the RN to qualified paraprofessionals or unlicensed assistive personnel (UAPs) in accordance with the state nurse practice act. The RN must determine which student care activities may be delegated, under what circumstances it is appropriate to delegate aspects of student care, and by whom the delegated portions of care can safely be provided. The RN is responsible for the assessing, planning, training, supervising, and evaluation of the unlicensed assistive personnel (UAPs).

RATIONALE

More students with special health care needs are now attending school and placing new demands on school districts. As a result, local school boards must provide sufficient staff and resources to safely meet the needs of students with chronic or urgent health care needs by providing a level of school health nursing services previously not required. Ancillary staff may be useful in some settings in meeting these growing needs. However, safe care for students must be the priority. When all or a certain part of a student's nursing care is delegated by a RN, the performance of the activity or procedure is transferred to another person, but the RN retains the accountability for the outcome. This is similar to the assignment of certain tasks to a classroom assistant while the teacher retains responsibility for the learning outcome.

School administrators are legally responsible for the safety of all students, including the provision of required health services by qualified staff. They have certain responsibilities regarding the educational placement of students but they cannot legally be responsible for deciding the level of nursing care required by an individual student with special health care needs. The RN, based on his or her knowledge, and in accordance with the state's nurse practice act and related state rules and regulations, is responsible for determining whether care should be provided by a licensed nurse or delegated to a trained and supervised unlicensed assistive personnel. Use of non-qualified school staff risks harm to students. In addition, non-licensed school staff can be held liable for their actions if they practice nursing or medicine without a license authorizing such practice.

By professional and legal mandate, RNs are ultimately responsible for the quality of nursing they provide and are personally and professionally liable for all errors in nursing judgment. If the RN's actions violate the requirements of the nurse practice act, the state board of nursing can take disciplinary action against the RN, including revocation of his/her license to practice nursing.

DEFINITIONS

Delegation "the transfer of responsibility for the performance of an activity from one individual to another, with the former retaining accountability for the outcome" (American Nurses' Association (ANA), 1994, p. 11).

Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN): minimal educational preparation: graduate of a technical program, licensed by the state.

Unlicensed assistive personnel (UAP): "individuals who are trained to function in an assistive role to the registered professional nurse in the provision of [student] care activities as delegated by and under the supervision of the registered professional nurse" (ANA, 1994, p. 2).

Qualified School Nurse: "a registered nurse (RN), minimum educational preparation: Baccalaureate Science in Nursing (BSN), licensed by the state. National certification preferred. School nursing is a specialized practice of professional nursing that advances the well being, academic success, and life long achievement of students. To that end, school nurses facilitate positive student responses to normal development; promote health and safety; intervene with actual and potential health problems; provide case management services; and actively collaborate with others to build student and family capacity for adaptation, self management, self advocacy, and learning. (NASN, 1999)

Supervision "is the active process of directing, guiding, and influencing the outcome of an individual's performance of an activity" (ANA, 1994, p. 10).

SUMMARY

The National Association of State School Nurse Consultants believes that schools have an obligation to ensure the quality and safe provision of school nursing services as necessary for the health, rehabilitation and well being of students with health impairments. Therefore, services should be provided by qualified nursing personnel and with utmost regard for protecting the student. School nursing services should either be directly provided by licensed professional (RN) school nurses or delegated by the RN to qualified paraprofessionals or trained unlicensed assistive personnel (UAPs). In either case, the RN retains accountability for the outcome.

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Revised: September 1998, April 2000

Appendix C.6

National Association of School Nurses

Position Statement

Delegation

HISTORY:

Advances in health care and technology offer greater opportunities for children with special health care needs to attend school. Considering the complexity of the care needed by these students, delegation of care by the school nurse to an unlicensed person in the school setting, if allowed by the state's nurse practice acts, can be a safe and fiscally responsible way to meet the health needs of the school community. Nevertheless, the school community must be aware that, to ensure the safety, health, and educational success of these students, there are limitations to the use of delegation.

DESCRIPTION OF ISSUE:

The incidence of chronic illnesses (e.g., asthma, diabetes, attention deficit disorder) in school-age children is increasing. In addition, complex medical problems that were at one time only managed at inpatient settings are now being managed in the community, including the school setting. Federal mandates and parental expectations that the school is indeed able to manage their child raises the demands for qualified personnel to ensure the health and safety of students with special health needs.

Delegation has been defined as "the transfer of responsibility for the performance of an activity to another, with the former retaining accountability for the outcome" (ANA, 1994, 11). Guidelines and standards for delegation of nursing care are further defined by each state's nurse practice act and its associated rules and regulations. Some states and territories restrict the procedures that can be delegated; others do not allow delegation at all.

Delegation of nursing care is a complex legal and clinical issue in any setting, and is especially challenging in schools. It is the school nurse who must have a clear understanding of what constitutes his or her scope of practice to ensure that state nursing practice acts are not violated, and to make certain that school health and safety are not threatened. In turn, this knowledge needs to be communicated to parents, administrators, school staff, and students to ensure they understand the legal and professional issues involved in delegation.

RATIONALE:

Only a registered nurse can delegate nursing care. It is critical that the school nurse be involved in district policy development that addresses the issue of delegation of care in the school setting.

The school nurse is responsible for using professional nursing judgment to determine the appropriate level of care needed for each student, including whether or not tasks can be delegated. Once the school nurse determines that a task can indeed be delegated (based on the definition of delegation, guidelines provided by the state's nurse practice act, and assessment of the unique characteristics of the individual student needing nursing services), an appropriate delegatee must be chosen.

By definition, a delegated nursing service requires that the nurse train and supervise the delegatee and the health outcome of the student. The training must be documented. The documentation must reflect that the delegatee understands what needs to be done and demonstrates proficiency in performing the delegated task for each student. Ongoing and regular evaluation by the registered nurse is required in accordance with state, district, and/or school policy. The school nurse must take appropriate actions when the delegatee is unsafe in performing delegated tasks.

CONCLUSION:

The National Association of School Nurses supports appropriate delegation of nursing services in the school setting, based on the definition of delegation, guidelines provided by state nurse practice acts, guidelines provided by the school nurse consultants council and the nursing assessment of the unique needs of the individual student. Only registered nurses can delegate nursing care in the school setting. The school nurse shall be involved in the development of school district policy and procedures related to delegation of care, to promote an understanding of the complex legal and clinical issues that surround delegation of care.

The health, safety, and welfare of the student must be the primary consideration in any decision to delegate. The school nurse making such a decision must be familiar with applicable nursing standards, the state's nursing practice act, and other applicable state and federal mandates. The school nurse must also be familiar with pertinent state education, public health and pharmacy laws and regulations.

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Appendix F.1

ACCOMMODATION PLAN PERIOD from _____ to _____ Review date _____	**STUDENT** **SECTION 504** **ACCOMMODATION PLAN**
Name _____Birthdate _____ School _____ Grade _____ Date of Plan Meeting _____	
Describe the nature of the concern which results in an unequal educational opportunity due to a handicapping condition:	
Describe the basis for determination of a handicapping condition:	
Describe the reasonable accommodations that are necessary:	

Participants Name	Title
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Appendix F.2

Technical Skills and Services to Meet the Health Care Needs of Students in the School Setting

All students requiring technical skills and services to meet their health care needs at school should be seen by a registered nurse (RN) for assessment, planning and monitoring. In addition, those students should have a health care action plan written and implemented by a registered nurse. The registered nurse may be employed by the school district or contracted from an agency where nursing services are available.

When a physician's written authorization is required for specialized health care, the physician may serve as a team member to develop a health care action plan. The procedure should not be performed at school unless clearly necessary and when it cannot reasonably be accomplished outside of school hours. Students and parents should inform school personnel of techniques and procedures being used at home.

There are certain procedures that cannot be performed by a non-medical person. School personnel, including the nurse, may need additional training for some procedures. If no registered nurse is available, a physician should determine who may safely provide care.

The Department of Health and Senior Services has training videos on a number of chronic health conditions and the care required in the school setting. Commercially available procedure books also include forms on which to document the skills taught. The caregiver, the parent and the nurse should all sign off on the initial training. The person delegating the care should periodically monitor the quality of the care to ensure the procedure is being followed as taught, is being documented as required and the caregiver is reporting concerns appropriately.

The following chart describes the student's health care needs and who may be considered as a caregiver. A physician or a registered nurse should make the determination based on an assessment of the child's health status, the complexity of the procedures and the capability of the proposed caregiver. The caregiver must be provided training and support until they feel competent to provide the care. The person delegating the care must be confident the caregiver has mastered the skills necessary.

TECHNICAL SKILLS CHART

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
Personal Care 1. Dressing (Assist with clothing)	X	X	X	X	X	X		Student and parent can inform school personnel of procedure being used at home.
2. Personal Hygiene Oral care Nail care Skin care Bathing Menstrual Hygiene	X	X	X	X	X	X	Evidence of rash, skin breakdown and/or infection	May request personal care items from parent unless activity is called for in IEP.
3. Decubitus Prevention Care	X X	X X	X	X	X	X *	*RN may determine if other caregivers may provide care for decubitus if evidence of granulation and non-healing.	Prevention care to be taught by RN, OT or PT. Requires physician's orders.
4. Positioning	X	X	X	X	X	X	Evidence of skin breakdown and/or pain on movement.	Adequate space and equipment must be available. Positioning to be taught by PT, OT, or RN.
5. Exercise (range of motion or prescribed exercise program.	X	X	X	X	X	X	Evidence of pain or restricted movement.	May require a physician order. Adaptive PE teacher should be involved.
6. Ambulation (assistance with cane, walker, wheelchair, crutches)	X	X	X	X		X		Appropriate equipment must be available. May require physician's order. Adaptive PE teacher should be involved.
7. Casts, Braces and Prostheses (observation, alignment, functioning)	X	X	X	X	X	X	Evidence of impaired circulation, infection, pain, drainage or bleeding.	

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
8. Use of Warm and Cold Applications	X	X	X	X		X	Change in skin color, texture, or temperature beyond what is expected from application.	May require physician's order. Supplies and equipment must be available. Special precautions to be observed for students with diabetes, heart disease or unstable body temperatures.
9. Measurements Temperature, Pulse and Respiration (TPR)	X	X				*	Evidence of fluctuating or abnormal TPR.	
Blood Pressure	X	X				*	Evidence of fluctuating BP or protocol requiring BP be taken before or after medication or treatment.	Appropriate equipment must be available.
Height/Weight	X	X	X	X	X	X	Evidence of frequent fluctuations or dramatic changes. Arrested growth.	Medications may effect changes.
Intake/Output	X	X	X	X	X	X	Changes in usual patterns.	

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
10. Medications (Assist student)	X	X				*	Medications requiring BP, radial or apical pulse before or after medication. Medications that require nursing judgement to determine dose.	The school should have a policies for medication administration, regardless of route of administration. Requires physician order (prescription) and parent authorization. Over the counter drugs require at least a parent authorization. Unlicensed personnel giving meds must be appropriately trained in specific routes of administration of medications. Training must be documented.
Oral	X	X				*	RN should provide the training of any personnel giving medications.	
Rectal	X	X				*		
Opthalmic (eye)	X	X				*		
Otic (ear)	X	X				*		
Medications via gastrostomy or nasogastric tube	X	X				*	Usually not delegated. Evidence of displacement of tube, obstruction of tube, excessive vomiting or diarrhea	Requires prescription which must specify administration via feeding tube. Nursing personnel will follow health care action plan for reinsertion of tube if displaced.
Medication via intravenous tube (already in place)	X	X					Not to be delegated except to qualified nursing personnel.	Requires prescription. If tubing obstructed, follow health care action plan.
Medications by Intramuscular or subcutaneous injection	X	X					Not to be delegated except to qualified nursing personnel. Might be given by other trained personnel in an emergency, e.g., severe allergic reaction.	Requires prescription.

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
11. Fluids							Special diets required. Evidence of change in student's oral, motor, swallowing, positioning and/or sensory abilities.	Student and parent/guardian should inform school personnel of procedures used at home.
• Nourishment Preparation	X	X	X	X	X	X		
• Oral feedings	X	X	X	X	X	X		
• Hyperalimentation (high calorie intravenous feedings)	X						May be delegated to qualified nursing personnel.	Requires prescription
• Gastrostomy or Nasogastric tube feeding (tube or button in place)	X					*	Evidence of obstruction, malabsorption, infection at insertion site, displacement of tube, excessive vomiting or diarrhea.	Procedure requires a prescription. If feeding does not require a prescription, schools that participate in USDA school lunch program must provide formula at price of regular lunch. Nursing personnel will follow health care action plan for reinsertion of tube.

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
12. Bowel and Bladder Care:								
• Bedpan, urinal or commode	X	X				*	Evidence of infection and/or skin breakdown.	Appropriate equipment must be available.
• Care of Incontinent student (including diapering)	X	X				*	Evidence of infection and/or skin breakdown. Bowel/bladder training may be indicated.	Parent/guardian must provide supplies and clean clothing. Is an infection control issue.
• External Urinary Catheter	X	X				*	Evidence of infection or pain.	Parent/guardian provides supplies.
• Clean Intermittent Catheterization	X	X				*	Evidence of infection, pain, bleeding, inability to insert catheter.	Requires physician order and parent authorization. Student and parent inform school of procedures used at home.
• Indwelling Catheter	X	X				*		Parent/guardian to provide supplies.
• Prescribed Bowel and Bladder Training	X	X				*	Evidence of skin breakdown or infection.	Parent/guardian to provide supplies.
• Stoma Care	X	X				*		

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	**LPN**	**PT**	**OT**	**T**	**O**		
13. Respiratory Care:								
• Postural drainage and/or percussion	X	X	X	X		*	Evidence of increasing respiratory distress	
• Spirometer (assisted deep breathing)	X					*	May be provided by respiratory therapist or delegated to qualified nursing staff. Evidence of increasing respiratory distress	Requires physician order.
• Oxygen per mask or Cannula	X					*	May be provided by respiratory therapist or delegated.	Requires physician order. Requires safety precautions for oxygen use, storage, etc. Parent/guardian provides equipment, supplies, and oxygen, and takes responsibility for moving oxygen tanks.
• Oxygen per nebulizer	X					*	May be provided by respiratory therapist or delegated. Evidence of increasing respiratory distress or obstruction. Need for medication.	Requires physician order. Alternate power supply must be available. Follow medication policy if drugs are administered via nebulizer.
• Suctioning (oral) Machine or bulb	X	X				*	Respiratory distress during suctioning. Evidence of bright red bleeding	Requires physician order.
• Tracheostomy	X	X				*		
14. Dressings:							Excessive bleeding or discharge.	
• Reinforcement	X	X				*	Complaints of pain or discomfort	
• Clean dressing	X	X				*		
• Sterile	X	X					May be delegated to qualified nursing personnel	Requires physician order. Parent/guardian provides supplies.

HEALTH CARE NEED	SCHOOL PERSONNEL						CIRCUMSTANCES REQUIRING NURSING JUDGEMENT	REMARKS
	RN	LPN	PT	OT	T	O		
15. Specimen collection (Urine, stool, sputum, Blood, throat culture)	X	X				*	Evidence of infectious disease	Requires a physician order. Is an infection control issue. Health care provider or parent/guardian provides supplies and appropriate collection container. Observe universal precautions, wearing gloves.
16. Specimen testing Urinalysis Hematocrit Blood Glucose monitoring	 X X X	 X X X				 * *	Report questionable results	Designate personnel to monitor self-testing by student. Parent/guardian to provide supplies. Requires physician order

RN – Registered Nurse
LPN – Licensed Practical Nurse
PT – Physical Therapist
OT – Occupational Therapist
T – Teacher(s)
O -- Others Includes individual appropriately trained, as specified in health care action plan for student. Training may be done by personnel listed as providers.

If another type of specialized procedure is required by a student in the school setting, the student/family, student's physician and school staff, including the registered nurse will jointly determine who can best provide the care.

Appendix F.3

Competencies of Personnel Providing Health Services in Schools

In exploring the provision of health-related services in schools, it is necessary to outline the competencies of the individual providing the care. This is necessary not only from a legal, but from an ethical standpoint. The following provides a summary of these competencies.

I. **Registered Nurse**

A. The nurse must have a current license in good standing to practice as a registered nurse in the state of Missouri.

B. Performance of professional nursing services means the performance of both independent nursing functions and delegated medical and dental functions which require specialized knowledge, judgement and skill and as governed by the Missouri Nurse Practice Act.

C. The professional nurse has an ethical and legal responsibility to provide care according to the code of ethics and the Nurse Practice Act.

D. Special competencies of the registered nurse include, but are not limited to, the ability, knowledge and skill to perform the following activities:

1. Assessment

a) Obtain health information from health care providers
b) Determine the depth to which the health assessment is required for each individual student
c) Use physical assessment skills in determining the current health status of the student
d) Interpret health history information, medical reports, nursing observations and test results
e) Determine the importance of the health information and its impact on the educational process
f) Make specific recommendations regarding care

2. Planning

a) Develop a health care plan to meet the student's individual health needs in the school setting; and
b) Collaborate with school personnel, student, parents and primary care provider to develop this plan.

3. Implementation and Evaluation

a) Coordinate all medical contacts, referrals and interpretation of medical data
b) Manage the health care plan for the student's special needs in the school setting
c) Provide direct health care services for the student when appropriate and if properly trained

d) Develop procedures and provide training for others providing care
e) Monitor the health services provided by other school personnel
f) Make recommendations to modify the school program to meet the student's health care needs
g) Provide health consultation/health education/health promotion to the student and family
h) Act as a liaison between school, community health care providers, parent and student
i) Periodically evaluate the health care plan and set new goals and objectives to meet the student's current needs

II. **Other school personnel providing health related services in school settings**

A. Professionals certified by the Missouri Department of Elementary and Secondary Education should follow the standards of their profession in relation to their involvement in the health care plan.
B. Non-certified school personnel are identified as those functioning under the direction of the principal, with consultation with the school nurse. This category would include secretaries, health aides, teacher aides, etc. This group is referred to as unlicensed assistive personnel (UAP). Licensed practical nurses must be supervised by a registered nurse or a physician.

Qualifications of these UAPs include, but are not limited to:

- Is currently trained in first aid and CPR
- Participates in training and mastery evaluation of skills
- Is dependable and reliable when working within the confines of guidelines and health care plans
- Uses discretion and respects confidentiality of information
- Exercises good judgement and requests additional assistance when necessary
- Provides designated health care services, within the individual's ability and training, for the student as identified in the plan and monitored by the registered nurse

Appendix F.4

Health Care Plan Period _____ to _____ Review date _____	INDIVIDUALIZED HEALTH **CARE ACTION PLAN**

I. IDENTIFYING INFORMATION	
Student's name	School
Birthdate	Teacher
Age	Grade

CONTACTS

PARENT/GUARDIAN
Mother's name _____ Home Phone_____

Address _____Work Phone _____

Father's name _____Home Phone _____

Address _____ Work Phone _____

PHYSICIAN
Physician _____Phone _____

Address _____
HOSPITAL
Hospital Emergency Room _____Phone _____

Hospital Address _____Phone _____

EMERGENCY MEDICAL SERVICES _____

II. MEDICAL OVERVIEW

Medical condition _____Any Known Allergies _____

Medications _____

Possible side effects _____

Health care procedures needed at school

III. OTHER SIGNIFICANT INFORMATION
☐ Emergency Action Plan on file ☐ Individual Health Plan on file
IV. BACKGROUND INFORMATION/NURSING ASSESSMENT
Brief Medical History
Special Health Care Needs
Social/Emotional Concerns
V. HEALTH CARE ACTION PLAN
Attach physician's order and any specialized procedure.
Student specific procedures/interventions

Procedure	Performed by	Equipment	Maintained by	Authorized/trained by

V. HEALTH CARE ACTION PLAN (cont.)		
Medications		
Dietary Needs		
Transportation Needs		
Classroom/School Modifications (including adaptive PE)		
Equipment – list necessary equipment/supplies	Provided by parent	Provided by school
None required		
Safety measures		
Substitute/Back up (when primary caregiver is not available)		
Possible problems to be expected when performing procedure(s)		
Emergency Plan _____ Transportation Plan _____		

VI. DOCUMENTATION OF PARTICIPATION

We have participated in the development of the Health Care Action Plan and agree with its contents.

Signature_____ Date _____

_____ Administrator or Designee

_____ Parent

_____ Nurse

_____ Teacher

_____

_____

VI. PARENT AUTHORIZATION FOR SPECIAL HEALTH SERVICES

We (I), the undersigned who are the parents/guardian of _____
Birthdate _____, request and approved this Health Care Action Plan. We (I), understand that a qualified person(s) will be performing the health care service. It is our understanding that in performing this service, the designated person(s) will be using the attached special care procedure which has been approved by the student's physician and health care team.

We (I) will notify the school immediately if the health status of _____
changes, if we change physicians, or there is a change or cancellation of the procedure.

We (I) agree to provide the following, if any: medication, medication equipment and supplies and dietary supplements requiring a prescription.

_____ Parent Signature Date _____	_____ Parent Signature Date _____

Appendix F.5

Emergency Action Plan Period _____ to _____ Review Date _____	**EMERGENCY ACTION PLAN**

I. IDENTIFYING INFORMATION

Student Name	Birthdate
Primary Physician	Phone
Specialist Physician	Phone
Preferred Hospital	Allergies

II. STUDENT SPECIFIC INFORMATION

If you see this . . .	Do this . . .

IF AN EMERGENCY OCCURS

1. Stay with the student or designate another adult to do so.
2. Call or designate someone to call the school nurse and/or principal or building administrator.
   a. State who you are.
   b. Where you are located (school, location in building).
   c. Nature of the problem.
3. The nurse will assess the child and determine whether the emergency plan should be implemented.
4. If the nurse is unavailable, the following staff members are trained to deal with this emergency, and to initiate the emergency plan. If situation appears to be life-threatening, call 911.

Staff Member(s)	Location

Appendix F.6

Transportation Plan Period from _____ To _____ Review date _____	**TRANSPORTATION PLAN FOR STUDENT WITH SPECIAL HEALTH CARE NEEDS**

I. ADAPTATIONS/ACCOMMODATIONS REQUIRED

_____ Transportation Aide

_____ Bus Lift

_____ Seat Belt

_____ Special Restraint

_____Wheel Chair tie down

_____ Space for equipment: specify _____

II. POSITIONING OR HANDLING REQUIREMENTS

_____ None

_____ Describe

III. BEHAVIOR CONSIDERATIONS

____ None

____ Describe

IV. TRANSPORTATION STAFF TRAINING
Training has been provided to drivers and substitute driver(s). ____ yes ____no Describe training provided   Date training completed _____

V. STUDENT SPECIFIC EMERGENCY PROCEDURES	
If you see this	Do this

Appendix F.7

Care of Equipment

Definitions:

Care of

implies looking after or dealing with something or someone.

Equipment

is something material with which a person, organization or entity is equipped, i.e., the instruments, apparatus or things required for a particular job or purpose.

Purpose:

- To ensure the equipment will function when needed by the student for routine care or in an emergency
- To minimize the risk of infection from equipment shared by several students
- To reduce risk of infection from repeated use of equipment by the same student

1. Obtain the manufacturer's instructions from the supplier or the parent.	• Make two copies; keep one in your building file, keep the other in a resealable bag with the piece of equipment.
2. Become very familiar with the equipment.	• Arrange for a knowledgeable representative to provide a demonstration. This might be the therapist, family member, home care provider, hospital staff, manufacturer representative, pharmaceutical sales person and/or the physician.
3. Make sure all supplies are on hand.	• Arrange for the family to provide any specialized cleaning supplies, any special tools (odd sized screwdrivers, wrenches, etc.) and spare parts (tubing, nuts, bolts, screws, spare glass suction bulbs, bottles, etc.
4. Keep parts and equipment in a labeled resealable plastic bag with the equipment.	• If it must be stored separately, attach a note to the equipment telling where it is stored.
5. Maintain a current list of local supplies of oxygen, IV equipment, odd-sized hardware.	• Keep this list as well as a notation about an individual student's supplier because you may need a second source to call in an emergency.
6. Work with the classroom teacher to establish a clean area for student's extra clothing and supplies.	• This is separate from personal care items and soiled items that will be sent home with the student.

7. Recommend that each person working with the student, wash the equipment with soap and water, rinse, disinfect, rinse and dry after each use.	• Refer to Universal Precautions regarding care of surfaces, equipment, etc.
8. Work with the building administrator and custodian to have the bathrooms and large surfaces cleaned and disinfected daily and as needed.	• Refer to Universal Precautions.
9. Determine who will prepare any disinfectant solution(s), how often and where they will be stored.	• This should be decided on a building level, usually by the custodian.
10. Work with the custodian to maintain a supply of plastic bags and disposable gloves.	• Place a supply in each classroom and work area.
11. Obtain at least one covered puncture-resistant container to be used to discard sharp items that might be contaminated with body fluids.	• Secure a sharps container for each building.
12. Provide instruction for proper care of used needles and other supplies contaminated with body fluids.	• All staff should receive instruction in Universal Precautions on an annual basis. Follow school district/local community health policy to arrange for proper disposal of the sharps container when full.
13. Assign a specific person to care for equipment used in special care procedures.	

Appendix F.8

Sample Letter To Physician Regarding Health Care Plan

DATE

Dear Dr. _____;

The _____ school district has been asked to provide specialized health care for your patient, _____.

If it is essential that this procedure be provided during school hours, we will need your written order on file.

Attached is a tentative health care plan for this student, including a description of a standardized procedure. Please review these materials, make written comments and provide the requested information to guide us in providing a safe school environment. We will incorporate your comments and make adjustments in the procedure as directed. Services will begin when we have the necessary orders and adequately trained personnel in place.

Please feel free to contact _____, who is assuming the responsibility for the management of this student's health care in our school. She (he) can be reached at _____ (add best time to call, if this is pertinent).

Sincerely,

Appendix F.9

Resources for Special Health Care Needs

The School Nurse's Source Book of Individualized Health Plans, Volume I and II, Mary Kay Haas, Editor

Missouri Association of School Nurses, Attn: Genie Drown
Ph: (573) 696-2282 or E-mail: gdrown@mail.hallsville.k12.mo.us
Volume I (book) $39.95 (plus shipping, est. $3.85)
Volume II (book) $44.95 (plus shipping, est. $3.85)

MacGill (800) 323-2841
Volume I (book) $33.60 (plus $3.75 shipping and handling)
Volume II (book) $39.90 (plus $3.75 shipping and handling)
Volume I (software only/IBM or Mac) $40.00 (plus $3.75 shipping and handling)
Volume I (book and software/IBM or Mac) $73.00 (plus $3.75 shipping and handling)

Sunrise River Press (800) 895-4585
Volume I (book) $39.95 (plus $4.95 shipping and handling)
Volume II (book) $44.95 (plus $4.95 shipping and handling)
Volume I and II (software only) $84.95 (plus $4.95 shipping and handling)
Volume I and II (software and books) $154.95 (plus $4.95 shipping and handling)

Managing the School Age Child with a Chronic Health Condition, Georgianna Larson, Editor

Missouri Association of School Nurses, Attn: Genie Drown
Ph: (573) 696-2282 or E-mail: gdrown@mail.hallsville.k12.mo.us
$29.95 (plus shipping, est. $3.85)

MacGill (800) 323-2841
$24.00 (plus $3.75 shipping and handling)

Sunrise River Press (800) 895-4585
$29.95 (plus $4.95 shipping and handling)

Children and Youth Assisted by Medical Technology in Educational Settings (1997)

(Guidelines for Care), Project School Care, Boston Children's Hospital

Paul Brookes Publishing Co (800) 638-3775
$53.00 (plus $5.30 shipping and handling)

School Health (800) 323-1305
$50.95 (plus shipping and handling)

Computerized Classroom Health Care Plans for School Nurses (3rd Edition)

(Comes with manual and more than 100 different care plans on disk and hard copy, available in Microsoft Works or Microsoft Word for IBM or Mac)

JMJ Publishers, 1156 Wilson Ave, Salt Lake City, UT 84105, Ph: (801) 487-3017
$89.00 (includes shipping and handling)

MacGill (800) 323-2841
$85.00 (plus $3.75 shipping and handling)

Guidelines for Troubleshooting Insulin Pumps in the School

Any child with diabetes is at risk for both hypoglycemia (low blood sugar level) and for hyperglycemia (extreme high blood sugar levels) with or without ketones. This is no different for a child who wears an insulin pump. It is important for school personnel to know how to treat these two problems if they should occur. The pump does not need to be disconnected.

Hypoglycemia (Low Blood Sugar)

- Symptoms may occur rapidly with or without noticeable signs and symptoms.
- Symptoms may vary from child to child and from one episode to another.
- There may be time when hypoglycemia occurs without an apparent cause.
- If symptoms are left untreated, they may progress to the inability to eat or drink, unconsciousness, tremors or seizure.

Possible causes of **Hypoglycemia**:

- Increased activity
- Delayed or skipped meal
- Inadequate meal
- Too much insulin

Common Signs and Symptoms of **Hypoglycemia**:

- Pale
- Shaky
- Sweaty
- Cranky/Irritable
- Sleepy
- Hungry
- Confusion
- Headache
- Dizziness

Potential Causes of Hypoglycemia With Insulin Pump

Possible Cause	Action
Insulin Pump ■ Basal rate programmed incorrectly ■ Clock time incorrect on display	■ Check times and basal rates ■ Reset clock
Food Intake ■ Bolus too large ■ Improper timing of insulin bolus	■ Check bolus amounts and times ■ Match timing of insulin with bolus Check blood glucose before meal

(list continued on next page)

Potential Causes of Hypoglycemia With Insulin Pump
(continued)

Possible Cause	Action
Activity ■ Did not activate suspend or a temp basal rate ■ Food intake not adequate to accomodate exercise. ■ Unplanned activity	■ Consult with health care professional for guidelines to temporarily decrease rate for exercise ■ If not decreasing insulin for exercise, must eat carb containing food prior to exercise ■ Must check blood glucose prior to activity ■ Effects of exercise may be present for several hours after the exercise
Self-Monitoring of Blood Glucose ■ Infrequent blood glucose testing ■ Hypoglycemia unawareness	■ Check blood glucose a minimum of four times per day ■ May need to raise blood glucose goals

TREAT HYPOGLYCEMIA IMMEDIATELY!!

Use "Rule of 15"

Consume 15 grams of fast-acting carbohydrate
Wait 15 minutes
Recheck blood glucose
If blood glucose is <90 mg/dl, repeat above steps.*

THERE IS NO NEED TO DISCONNECT PUMP!!

If a child cannot take food by mouth, give GLUCAGON by injection. Turn the child on his/her side to prevent aspiration in the event of vomiting.

Treat the condition first, and then call the **medical team** and the parents. The school's plan of care should indicate how hypoglycemic epidsodes are to be reported to a parent.

Since eating disorders can be a problem, the student should be referred back to the registered dietitian and primary provider if a pattern becomes apparent. At point of service, the student should be counseled about adequate intake and carrying a sugar source.

*While 90 mg/dl is certainly not considered low blood sugar, due to the volatility of blood glucose levels in type 1 children related to changes in activity and variations in insulin absorption, 90 can drop to <60 very quickly.

Hyperglycemia (High Blood Sugar)

- High blood sugar occurs due to an imbalance of food, exercise and insulin. Although not desirable, there is no immediate problem caused by mild hyperglycemia.
- This could happen in any child or teen with diabetes.

Possible causes of **Hyperglycemia**:

- Illness
- Too much food
- Not enough insulin
- Decreased activity
- Increase in hormones
- Rebound from low blood glucose level

Common Signs and Symptoms of **Hyperglycemia**:

- Increased thirst
- Frequent urination
- Fatique
- Blurred Vision

Potential Causes of Hyperglycemia With Insulin Pump

Possible Cause	Action
Infusion Site/Set*	
■ Redness, irritation at site	■ Change infusion site/set
■ Bump or nodule at infusion site	■ Rotate site, avoid these areas
■ Needle inserted in area of friction	■ Avoid waistline and friction areas
■ Air in tubing	■ Prime air out of tubing
■ Luer lock connection between cartridge/ reservoir not tight	■ Check connection
■ Insulin leakage at site	■ Change site
■ Not changing cannula every 2-3 days	■ Remember to bolus to fill cannula after site change
Insulin Pump	
■ Basal rate programmed incorrectly	■ Check times and rates
■ Pump is in SUSPEND	■ Take pump out of SUSPEND
■ Pump malfunction	■ Call pump manufacturer customer service
■ Pump alarms	■ Identify alarms, take action as outlined in User Manual
■ Time/date programmed incorrectly	■ Change cartridge/reservoir and infusion set
■ Occlusion alarm	■ Change batteries
■ Dead battery	■ Fill new cartridge/reservoir
■ Cartridge/reservoir empty	

*** Site should be changed every 2-3 days or as recommended by health care professional. Notify health care professional with signs or symptoms of infection.**

(list continued on next page)

Potential Causes of Hyperglycemia With Insulin Pump
(continued)

Possible Cause	Action
Food Intake ■ Bolus insufficient or omitted ■ Improper timing of insulin bolus	■ Need to count carbohydrates ■ Consult healthcare professional
Activity** ■ Blood glucose >240 with ketones before exercise	■ Blood glucose will increase with exercise when ketones are present

****Do not exercise with ketones. Consult healthcare professional for exercise guidelines.**

The treatment of high blood sugar in a student with an insulin pump is to give a correction bolus, temporarily increase the basal rate, or possibly, exercise. If there is a pattern of high blood glucose at certain times of the day, the parent or clinician should be notified. If a pattern emerges, refer the student back to the registered dietitian to review carb sources and portion sizes.

SMART PUMPERS TIP
When in doubt, change it out!!

For unexplained high blood glucose (>240 mg/dl two times in a row), change the cartridge/reservoir and infusion site and set; check the urine for ketones; and take fast acting insulin by syringe as directed by the health care professional.

Diabetic Ketoacidosis (DKA)

Ketones are produced when there is insufficient insulin. The body begins to break down body fat that produces ketones. As ketones increase in the blood and urine, the body becomes acidic, thus leading to a condition called Diabetic Ketoacidosis (DKA),

Symptoms of DKA may include:

- ✓ Moderate or large amounts of ketones in the blood and urine
- ✓ Nausea, vomiting, stomach pain
- ✓ Labored breathing
- ✓ Fruity breath
- ✓ Weakness
- ✓ Mental sluggishness, slowness to respond
- ✓ Loss of consciousness, coma

Source: The information in this section was obtained from Tricia Green, RN, CPNP, CDE with Animas Corporation and from *Pumper in the School*, a publication by MiniMed.

Insulin Pump Manufacturer Contacts:

Animas Corporation **1-877-YES-PUMP**
Disetronic Medical Systems, Inc. **1-800-280-7801**
Nipro Diabetes Systems, Inc. **1-888-647-7698**
Deltec, Inc. **1-800-826-9703**
Medtronic MiniMed **1-800-MINIMED**
Dana Diabecare USA **1-866-DANATEC**

Recommended Guidelines for Blood Glucose Control

Plasma Meter Values vs Whole Blood Meter Values

Most of the newer glucose meters are reporting blood glucose (blood sugar) as plasma rather than whole blood because laboratories report blood glucose as plasma glucose. Plasma glucose values read 10-15% higher than whole blood glucose values.

Blood glucose values less than 90 are considered low on plasma meters. Check the boxes below to see if you are using a plasma meter or a whole blood meter. See the table on page 94 for Recommended Guidelines for Blood Glurcose Control.

The "Take Action" column implies a possible insulin or food adjustment. We recommend keeping three to five days of blood glucose values to identify a pattern of consistent high blood glucose before calling in for an insulin adjustment. If blood glucose is consistently low, call for insulin adjustment.

Dietitians recommend reviewing food intake and carbohydrate counting skills to make sure inconsistent eating is not the cause of varying blood glucose values. Checking food portions with measuring cups is helpful.

Remember, unless you are on Multiple Daily Injections (three shots per day) or an Insulin Pump, you should have a consistent carbohydrate meal plan to follow.

Summer exercise and activities may also influence blood glucose. A rule of thumb is to take one extra carbohydrate (15 grams) for each 30 to 45 minute of more strenuous activity in addition to the current meal plan.

If you are not sure what your meter is, check with your pharmacist or health care provider.

Types of Glucose Meters

PLASMA

Accucheck Advantage (comfort curve strips)

Accucheck Complete (comfort curve strips)

Dex

Fast Take

One Touch Ultra

Freestyle

Prescision QID

Glucometer Elite

Surestep

Glucometer XL

WHOLE BLOOD

One Touch Basic

One Touch Profile

One Touch II

1. Values <90 on plasma meters should be treated as low BG.
2. The Fast Take meter is being discontinued but the strips will still be available.
3. Bring a logbook of 2 weeks of BG values to each appointment.

Recommended Guidelines for Blood Glucose Control *Ranges may vary according to individual needs				
PLASMA METER VALUES			**WHOLE BLOOD METER VALUES**	
When	Goal BG	**Take Action:** If BG's are out of range 2-3 days in a row.	Goal BG	**Take Action:** If BG's are out of range 2-3 days in a row.
Before Meals (Kids 5 yrs and Older)	90-130	Less than 90 or greater than 150	80-120	Less than 80 or greater than 140
Kids under 5 yrs	100-200	Less than 100 or greater than 200	100-200	Less than 100 or greater than 200
2 hrs after meals (MDI or Pumps)	Within 40 of premeal BG but less than 180	If less than or greater than 40 of premeal BG	Within 40 of premeal BG but less than 180	If less than or greater than 40 of premeal BG
Bedtime	110-150	Less than 110	100-140	Less than 100

Adapted from: "Shot Talk" produced by Children's Mercy Hospital & Clinics, The Children's Diabetes Center - Summer, 2001.

Proper interpretation of A1C test results requires that health care providers understand the relationship between test results and average blood glucose, kinetics of the A1C test, and specific assay limitations. Data from the Diabetes Control and Complications Trial (DCCT) relating A1C test results to mean plasma glucose levels appear in Table 1, but these data should be used with caution if the A1C test assay method is not certified as traceable to the DCCT reference method.

Table 1. Correlation Between A1C Level and Mean Plasma Glucose Levels

	Mean Plasma Glucose	
A1C(%)	**mg/dl**	**mmol/l**
6	135	7.5
7	170	9.5
8	205	11.5
9	240	13.5
10	275	15.5
11	310	17.5
12	345	19.5

Source: American Diabetes Association, Diabetes Care, Volume 26, Supplement 1, January 2003.

From The School Nurse
Subject: Diabetes

Diabetes is **NOT** an infectious disease. It results from failure of the pancreas to make a sufficient amount of insulin. Without insulin food cannot be used properly. Diabetes currently cannot be cured but can be controlled. Treatment consists of daily injections of insulin and a prescribed food plan. A student with diabetes can participate in all school activities and should not be considered different from other students.

Low blood sugar occurs when the amount of sugar in the blood is too low. This is caused by an imbalance of insulin, too much exercise, or too little food. Under these circumstances the body sends out numerous warning signs. If any of the following warning signs are recognized, the student should be encouraged to report them.

WARNING SIGNS OF LOW BLOOD SUGAR

Excessive Hunger	Blurred Vision	Poor Coordination
Perspiration	Irritability	Abdominal Pain or Nausea
Weak Pallor (pale skin)	Crying	Inappropriate Actions/ Responses
Headache	Confusion	
Dizziness	Inability to Concentrate	
Nervousness or Trembling	Drowsiness or Fatigue	

If the student is able to walk, please send him/her to the office accompanied by another student who can identify him/her to office personnel. If the student is unable to walk, please send for the nurse or an administrative assistant. The person who is sent for help should give the name of the student and the suspected problem.

Students with diabetes follow a prescribed diet and may select their foods from the school lunch menu or bring their own lunch. A midmorning and/or mid-afternoon snack may be necessary to help avoid low blood sugar.

The amount of sugar in the blood of a student with diabetes can be tested with special equipment. Testing the blood for sugar several times a day serves as an effective guide to proper diabetes control. Blood tests for sugar should be made before meals, and time should be allowed before lunch for the student who has diabetes to perform this test if requested.

The student with diabetes should be carefully observed in class, particularly before lunch. It is best not to schedule physical education just before lunch; and if possible, the student should not be assigned to a late lunch period. Many students require nourishment before strenuous exercise. Teachers and nurses should have sugar or carbohydrate available at all times. The student with diabetes should also carry a sugar or carbohydrate supply and be permitted to treat a reaction when it occurs.

Diabetic coma, a serious complication of the disease, results from uncontrolled diabetes. This does **NOT** come on suddenly and generally need not be a concern to school personnel.

Adapted from: “Diabetes Management in the School Setting”, 1998, Missouri Association of School Nurses.

National Association of School Nurses

Position Statement

Blood Sugar Monitoring in the School Setting

HISTORY:

Numerous students with diabetes attend school and require monitoring procedures to obtain/maintain optimal blood sugar levels. Blood glucose monitoring utilizes a drop of blood touched to a test strip and a meter that reads and displays a current level of blood glucose. Medical studies show that management of near normal glucose levels will prevent and slow the development of diabetes complications. The National Association of School Nurses (NASN) supports self-management of diabetes, while considering the individual status of each student.

DESCRIPTION OF ISSUE:

Each student with diabetes is unique in regard to his or her disease process, developmental and intellectual abilities, and required level of assistance with blood sugar monitoring. Academic productivity may be impaired if a student with diabetes is unable to monitor blood sugar levels promptly on an "as needed" basis in the least restrictive educational setting. NASN recognizes that the Occupational Safety and Health Administration (OSHA) regulations on bloodborne pathogens should apply to the school setting and all school personnel should adhere to local policies regarding these regulations.

RATIONALE:

Timely blood sugar monitoring and prompt intervention may prevent life threatening diabetic emergencies, in particular, hypoglycemic episodes. The school nurse is qualified to determine what level of assistance is required to competently perform, interpret, and intervene in blood sugar monitoring. Easy access to blood sugar monitoring at any given time is encouraged within the school setting.

CONCLUSION:

It is the position of the National Association of School Nurses that school nurses supervise the management and treatment of blood sugar monitoring within the school setting. The school nurse, parent, student, and health care provider should evaluate the self-management of blood sugar monitoring on a case-by-case basis. An individual health care plan including an emergency plan should be written by the school nurse and maintained for all students with diabetes. Training in recognizing symptoms of abnormal blood sugar levels should be provided to appropriate school staff. Direction may include assistance by staff with the blood sugar monitoring procedure, recording of results, and intervention as ordered by the student's health care provider.

School districts must establish direction in handling episodes of low blood sugar in students and staff members. State laws, nurse practice acts, and district policies may determine where the monitoring procedure will occur and may specify other staff members' ability to assist with the procedure. These determinations should be done on a case-by-case basis, taking into consideration student safety, proximity of the student's classroom to the health room, and the availability of the school nurse and other appropriately trained staff.

References/Resources:

1. American Diabetes Association (2001). Care of children with diabetes in the school and day care setting. *Diabetes Care*, 24(supplement 1) S108-112.
2. Gerber, M.V., Kalb, K.M., Luehr, R.E., Miller, W.R., Silkworth, C.K., & Will, S.I. (1993) *The school nurse's source book of individualized health care plans*. North Branch, MN: Sunrise River Press.
3. Grabeel, J. (1997) *Nursing Practice Management: Compendium of Individualized Healthcare Plans* Scarborough, ME: NASN
4. Hootman, J. (1996) *Quality nursing interventions in the school setting: Procedures, models, and guidelines*. Scarborough, ME: NASN
5. KinderCare Settlement Agreement Re: Diabetes Finger-Prick Tests (1996) www.usdoj.gov:80/crt/ada/kinder1.htm
6. Roche Diagnostics (1998) *Accu-Check Blood Glucose Monitor & Test Strips Users Manual* Indianapolis, IN
7. Individuals with Disability Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 *School Bill of Rights for Children with Diabetes*

Adopted: June 2001

Treatment of Low Blood Sugars

1. A low blood sugar level is an **emergency that needs to be treated immediately**. Without treatment, a low blood sugar may progress to unconsciousness and convulsions.

2. Low blood sugars can be prevented by:
   - **Extra** snacks for extra activity (consult exercise guide and/or dietitian)
   - Eating immediately after taking insulin if the blood sugar is less than 100 mg/dl
   - Eating an **extra snack** of carbohydrate and protein if the blood sugar is less than 120 mg/dl at bedtime
   - Replacing carbohydrates in the meal plan with things like regular pop or regular popsicles **ON SICK DAYS**

3. Treatment should be given whenever the blood sugar drops below 90 mg/dl or symptoms are present.

SYMPTOMS	TREATMENT
EARLY Grouchiness Shakiness Sweating Fast heart rate Pale skin Dizziness	**QUICK-ACTING SUGAR** • 15 grams of carbohydrate • **See treatment guide by age on page 97.** • **If not better in 15 minutes, repeat treatment.** • **If the next meal or snack is more than 30 minutes away, give an extra snack of carbohydrate and protein.**
MODERATE Confusion Poor coordination Inability to cooperate Slurred speech	**INSTANT GLUCOSE/CAKE FROSTING (GEL)** • Insert tube between gum and cheek. • Administer appropriate amount. • If no response in 15 minutes, administer glucagon. • If the next meal or snack is more than 30 minutes away, give an **extra snack** of carbohydrate and protein.
SEVERE Unconsciousness Convulsions	**GLUCAGON** • Administer Glucagon as directed. • **Call paramedics.** • **Phone diabetes doctor on call.** • **Feed as soon as possible after awakening.** • **Review expiration date and instructions in the Spring and Fall.**

Adapted from: "Diabetes Management in the School Setting", 1998, Missouri Association of School Nurses.

Carbohydrates for Treatment of Low Blood Sugar Management

- The following table contains correct amounts of carbohydrate for treating low blood sugar in children. Amounts will vary according to age.
- Chocolate candy bars should **NOT** be used in the treatment of low blood sugar because they are high in fat content. Fat causes digestion to be slower so that sugar does not enter the cells as fast as other choices.
- Milk is a good choice (especially during the night or if the next meal is more than about 30 minutes away) because it also contains protein and some fat which will help keep the blood sugar in the target range.
- If the next meal or snack is more than 30 minutes away, the fast-acting sugar should be followed by an extra snack consisting of a bread and a meat.

ITEM	5 YEARS OF AGE AND YOUNGER (5-10 GRAMS)	6-10 YEARS OF AGE (10-15 GRAMS)	10 YEARS OF AGE AND OLDER (15-20 GRAMS)
B-D Glucose Tablets (large) (3 tabs = 15 grams)	1-2 tablets	2-3 tablets	3-4 tablets
Dextrotabs, Dextrasol Tabs (small) (7 tabls = 15 grams)	3-4 tablets	5-6 tablets	7-8 tablets
Glucose Gel (31 gram tube)	1/6-1/3 tube	1/3-1/2 tube	½-2/3 tube
Cake icing (small tube) (1 teaspoon = 4 grams)	2 teaspoons	3 teaspoons	4-5 teaspoons
Honey, maple, or Karo Syrup (1 teaspoon = 5 grams)	1-2 teaspoons	2-3 teaspoons	3-4 teaspoons
Orange juide (1/3 cup = 10 grams)	¼-1/2 cup	½-3/4 cup	¾-1 cup
Apple juice (1/3 cup = 10 grams)	¼-1/2 cup	½-3/4 cup	¾-1 cup
Table sugar (1 teaspoon = 4 grams)	2 teaspoons	3 teaspoons	4-5 teaspoons
Regular pop (1 ounce = 3 grams)	2-3 ounces	4-5 ounces	5-6 ounces
Raisins (1 tbsp = 7 ½ grams)	1 tablespoon	1 ½-2 tablespoons	2 ½ - 3 tablespoons
Lifesavers (1 = 3 grams)	2-3	4-5	5-7
Milk 2% (8 ounces = 12 grams)	4-5 ounces	6-7 ounces	8-10 ounces

Adapted from: “Diabetes Management in the School Setting”, 1998, Missouri Association of School Nurses.

Additional Information and Resources

The American Diabetes Association (ADA) is the leading nonprofit health organization providing diabetes research, information, and advocacy. They have developed the Wizdom Kit for children who are newly diagnosed with diabetes.

For general information about diabetes or to locate the office nearest you, call 1-888-DIABETES (342-2383) or visit their website at: www.diabetes.org.

ADA – Springfield Area
1944-A E Sunshine
Springfield, MO 65804
(417) 890-8400

ADA – Joplin
P.O. Box 4995
Joplin, MO 64802
(417) 624-8455

ADA – Mid-Missouri
PO Box 1013
Columbia, MO 65205-1013
(573) 443-8611

ADA – Kansas City Area
10580 Barkley, Ste 400
Overland Park, KS 66202
(913) 383-8210

ADA – St Louis Area
10820 Sunset Office Dr, Ste 220
St Louis, MO 63127
(314) 822-5490

Diabetes Educators provide valuable services to those who have diabetes. To locate a Certified Diabetes Educator within your area, go to the American Association of Diabetes Educators web site at http://www.aadenet.org/FindAnEduc/index.html.

Central Missouri Association of Diabetes Educators
(573) 632-5310

Kansas City Regional Association of Diabetes Educators
(913) 631-3840 or (913) 676-2495

St Louis Association of Diabetes Educators (314) 644-6575

Nutrition is a key in managing diabetes. To locate a registered dietitian near you, contact

Missouri Dietetic Association
PO Box 1225
101 E. High St, Ste 200
Jefferson City, MO 65102-1225
(573) 636-2822
www.eatrightmissouri.org

For more information on community health centers that provide sliding-scale fee services, contact:

Missouri Primary Care Association
3325 Emerald Lane
Jefferson City, MO 65109
(573) 636-4222
www.mo-pca.org

Newly diagnosed families can turn to the Juvenile Diabetes Research Foundation (JDRF) for valuable information on how to deal with their child's illness. For more information contact the office nearest you or visit their website at: www.jdrf.org

JDRF – Metro St Louis/Greater Missouri Chapter
225 S Meramec, Suite 400
St Louis, MO 63105
(314) 726-6778

JDRF – Kansas City Chapter
6701 West 64th Street, Suite 319
Shawnee Mission, KS 66202
(913) 831-7997

The Missouri Department of Social Services Rehabilitation Services for the Blind (RSB) provides services to people with varying degrees of visual impairment, ranging from those who cannot read regular print to those who are totally blind.

Rehabilitation Services for the Blind
Missouri Department of Social Services
3418 Knipp Drive
PO Box 88
Jefferson City, MO 65103-0088
(573) 751-4249
www.dss.state.mo.us/dfs/rehab/

The Missouri Department of Health and Senior Services (MDHSS) has several divisions that work to improve the lives of Missouri citizens. In particular are those divisions that work with chronic illnesses, special health care needs, public health, and family health.

Missouri Department of Health and Senior Services
920 Wildwood
PO Box 570
Jefferson City, MO 65102-0570
www.dhss.state.mo.us

Division of Chronic Disease Prevention and Health Promotion
Bureau of Chronic Disease Control
(800) 316-0935
Arthritis & Osteoporosis
www.dhss.state.mo.us/moap
Asthma
http://www.dhss.state.mo.us/asthma/index.html
Cardiovascular Disease
www.dhss.state.mo.us/cardiovascular
Diabetes
www.dhss.state.mo.us/diabetes/

Division of Maternal, Child and Family Health
Bureau of Family Health
(573) 751-6215
Bureau of Special Health Care Needs
(573) 751-6246
www.dhss.state.mo.us/SHCN/index.html

Children who have diabetes can be suffering from other chronic illnesses, as well. Below you will find resources on different chronic illnesses that may be helpful.

Asthma & Allergy Foundation of America
1500 S Big Bend,
Suite 1 South
St Louis, MO 63117
(314) 645-2422
www.aafa.org

Children's Mercy Hospital & Clinics
Asthma Disease Management
Erika M Jones, RN, BSN
2401 Gillham Road
Kansas City, MO 64108
(816) 234-3097
www.childrens-mercy.org

Epilepsy Foundation
St Louis Region
7100 Oakland Avenue
St Louis, MO 63117
(800) 264-6970
www.epilepsyfoundation.org/stlouis

Children's Mercy Hospital & Clinics
Children's Neurology Clinic
Irene Dowler, RN, BS
2401 Gillham Road
Kansas City, MO 64108
(816) 234-3490
www.childrens-mercy.org

Several pharmaceutical companies have assistance programs to help people with their medications. A guide has been produced by Pharmaceutical Research and Manufacturers of America (PhRMA), and can be accessed at http://www.helpingpatients.org/

Pharmaceutical Research and Manufacturers of America
1100 Fifteenth Street
NW Washington, DC 20005
(202) 835-3400
www.phrma.org/

For people who have lost limbs due to diabetes and other causes, there is an informational clearinghouse to serve those individuals and the general public.

National Limb Loss Information Center
900 E Hill Avenue, Ste 285
Knoxville, TN 37915
(888) 267-5669
www.amputee-coalition.org

Resource Websites

American Diabetes Association
"Diabetes Care Tasks at School: What Key Personnel Need to Know" Curriculum
www.diabetes.org/schooltraining/
Recognized Programs
www.diabetes.org/education/eduprogram.asp
Wizdom Kit
www.diabetes.org/wizdom/ index.shtml

Bag of Hope from Juvenile Diabetes Research Foundation
www.jdrf.org

Bilingual information on diabetes and nutrition
http://multiculturalhealth.org

Centers for Disease Control Health Topic – Diabetes
www.cdc.gov/health/diabetes.htm

Children With Diabetes
www.childrenwithdiabetes.com/index_cwd.htm

Division of Adolescent and School Health (DASH), offers a good overview of adolescent health issues and major health risk behaviors
www.cdc.gov/nccdphp/dash

Division of Nutritional Health and Services, they have program materials and recipes and tips you can directly download
www.dhss.state.mo.us/MissouriNutrition/index.html

Food and Nutrition Information Center (FNIC) of the Department of Agriculture
www.nal.usda.gov/fnic

Guidelines on obesity and nutrition
www.niddk.nih.gov/health/ nutrition.htm

Key Statistics - Youth Risk Behavioral Surveillance System (YRBSS)
www.cdc.gov/nccdphp/dash/yrbs/

Lower Extremity Amputation Prevention Program (LEAP)
www.bphc.hrsa.gov/leap

National Diabetes Education Program (NDEP)
"Helping the Student with Diabetes Succeed: A Guide for School Personnel"
School Guide
http://ndep.nih.gov/materials/pubs/schoolguide.pdf
School Personnel Resource Web Page
http://ndep.nih.gov/resources/school.htm

National Dairy Council's "Nutrition Exploration"
www.nutritionexplorations.org

"National Standards for Physical Education" from National Association for Sport and Physical Education (NASPE)
www.aahperd.org/naspe

Missouri Diabetes Prevention and Control Program, provides information on diabetes and links to numerous diabetes web sites
www.dhss.state.mo.us/diabetes

Starbright Diabetes CD-ROM
www.starbright.org/projects/diabetes/index.html

Children's Hospitals & Facilities

Ronald McDonald House Charities
of Mid-Missouri
1001 E Stadium Boulevard
Columbia, MO 65201
(573) 443-7666
rmhc.missouri.org

Ronald McDonald House
3450 Park Avenue
St Louis, MO 63104
(314) 773-1100
www.rmhcstl.com/home.asp

Ronald McDonald House
4381 W Pine Blvd
St Louis, MO 63108
(314) 531-6601
www.rmhcstl.com/home.asp

Ronald McDonald House
2501 Cherry Street
Kansas City, MO 64108
(816) 842-8321
www.rmhckc.org/

Ronald McDonald House
1901 Olathe Blvd
Kansas City, KS 66103
(913) 384-5324
www.rmhckc.org/

Ronald McDonald House Family Room
2401 Gillham Rd
Kansas City, MO 64108
(816) 234-1533
www.rmhckc.org/

Ronald McDonald House
949 E Primrose Street
Springfield, MO 65807
(417) 886-0225

Ronald McDonald House
34th & Jackson
Joplin, MO 64803
(417) 624-2273
www.rmhjoplin.org/mission.htm

Ronald McDonald House
1001 East Stadium Blvd
Columbia, MO 65201
(573) 443-7666
www.rmhccolumbia.org

St Louis Shriners Hospital
2001 S Lindbergh Blvd
St Louis, MO 63131-3597
(314) 432-3600
www.shrinershq.org/shc/stlouis/index.html

Children's Hospital
University of Missouri Health Care
One Hospital Drive
Columbia, MO 65212
(573) 882-4141
http://www.hsc.missouri.edu/~children/

St Louis Children's Hospital
One Children's Place
St Louis, MO 63110
(314) 454-6000
http://www.stlouischildrens.org/

SSM Cardinal Glennon Children's Hospital
1465 S Grand Blvd
St Louis, MO 63104
(314) 577-5600
www.cardinalglennon.com/internet/home/net10hom.nsf

Children's Mercy Hospital
2401 Gillham Road
Kansas City, MO 64108
(816) 234-3000
www.childrens-mercy.org

Children's Mercy South
5808 W 110th Street
Overland Park, KS 66211
(913) 696-8000
www.childrens-mercy.org

Children's Mercy South
Children's Mercy Occupational Therapy and Physical Therapy, Speech and Hearing and Cardiology Clinics
5520 College Boulevard Building
Overland Park, KS 66211
(913) 696-8000
www.childrens-mercy.org

Children's Mercy – Parallel Parkway
4517 Troup
Kansas City, KS 66102
(913) 287-8800
www.childrens-mercy.org

Children's Mercy
Penn Park Medical Building
2928 Main
Kansas City, MO 64108
Pediatric Care Center
(816) 234-3086
Adolescent Medicine Clinic
(816) 234-3050
www.childrens-mercy.org

Children's Mercy – Paseo Clinic
4601 Paseo, Ste 200
Kansas City, MO 64100
(816) 234-3050
www.childrens-mercy.org

"DIABETES MANAGEMENT IN THE SCHOOL SETTING"
A Resource Guide for School Health Nurses

Product Survey Form

Institution: _____ Phone: (_____) _____-_____
Address: _____

Please help us improve future offerings by evaluating this resource guide.

1) Does your school employ a nurse or other health professional? *(Please check one.)*
Yes ___ No ___ Don't Know/Not Sure ___

2) For each section listed below, please respond with: *1=Yes, 2=Partially, 3=Not at All.*

Resource Guide Section	Was the content of this section practical and understandable?	Did the content of this section cover all pertinent topic facets?	Will you be able to use this section in your professional duties?
First Steps			
Overview			
Nutrition			
Exercise			
Medications			
Glucose Management			
Emergency Action Plans			
References			
Health Management			

3) What aspect or component of this resource guide was most helpful to you?
_____
_____

4) What changes would you make to this resource guide?
_____
_____

5) Thinking of your needs or interests, what topics would you recommend for future additions to this guide and/or Diabetes in the School Setting professional and/or public awareness activities?
_____
_____

6) Would you recommend this resource guide to someone else? *(Please check one.)*
Yes ___ No ___ Don't Know/Not Sure ___

Please return to: Diane C. Rackers
Missouri Department of Health and Senior Services
920 Wildwood Drive, PO Box 570
Jefferson City, MO 65102-0570
or fax to: (573) 522-2898

Health Management

Diabetes touches every part of your life. It's a serious, lifelong condition, but there's a lot that can be done to protect your health. You can take charge of your health--not only for today, but for the coming years.

Diabetes can cause health problems over time. It can hurt your eyes, your kidneys, and your nerves. It can lead to problems with the blood flow in your body. Even your teeth and gums can be harmed. Many of these problems don't have to happen.

The more you know about diabetes and managing the disease, the better you are able to spot early warning signs and get the medical attention needed to successfully care for diabetes. A person's ability to monitor their own care on a daily basis makes a significant difference in controlling the condition and avoiding potentially serious complications. Taking care of diabetes is a team effort between you and your health care provider team (doctor, diabetes nurse educator, diabetes dietitian educator, pharmacist, school nurse and others). You are the most important member of the team. Take charge of your diabetes care by learning what to do for good diabetes care.

EYE PROBLEMS

Diabetic eye disease (also called diabetic retinopathy) is a serious problem that can lead to loss of sight. There's a lot you can do to take charge and prevent such problems. A recent study showed that keeping your blood glucose closer to normal can prevent or delay the onset of diabetic eye disease. Keeping your blood glucose under control is also important. Finding and treating eye problems early can help save your sight.

Even if you're seeing fine, you need regular, complete eye exams to protect your sight. You should have a dilated eye exam once a year. If you haven't already had a complete eye exam, you should have one now if any of these conditions apply to you:

1. You've had type 1 diabetes for more than 5 years.
2. You have type 2 diabetes.
3. You're going through puberty and you have diabetes.
4. You're pregnant and you have diabetes.

ORAL HEALTH

Because of high blood glucose, people with diabetes are more likely to have problems with their teeth and gums. There's a lot you can do to take charge and prevent these problems. Caring for your teeth and gums every day can help keep them healthy. Keeping your blood glucose under control is also important. Regular, complete dental care helps prevent dental disease.

1. Keep your blood glucose in control.
2. Brush your teeth at least twice a day and get a new toothbrush every 3 months.
3. Floss your teeth daily.
4. Get regular dental care. Have your teeth cleaned at least every 6 months and have a full dental exam once a year.

FOOT PROBLEMS

Nerve damage, circulation problems, and infections can cause serious foot problems for people with diabetes. There's a lot you can do to prevent problems with your feet.

Controlling your blood glucose and not smoking or using tobacco can help protect your feet. You can also take some simple safeguards each day to care for and protect your feet. Measures like these have prevented many amputations.

Signs of Foot Problems

Your feet may tingle, burn or hurt. You may not be able to feel touch, heat, or cold very well. The shape of your feet can change over time. There may even be changes in the color and temperatures of your feet. Some people lose hair on their toes, feet, and lower legs. The skin on your feet may be dry and cracked. Toenails may turn thick and yellow. Fungus infections can grow between your toes. Blisters, sores, ulcers, infected corns, and ingrown toenails need to be seen by your health care provider or foot doctor (podia–trist) right away.

Protect Your Feet with the following:

1. Get your health care provider to check your feet at least four times a year.
2. Check your feet each day.
3. Wash your feet daily.
4. Trim your toenails carefully.
5. Treat corns and calluses gently.
6. Protect your feet from heat and cold.
7. Wear shoes and socks ALWAYS.
8. Be physically active.

BLOOD PRESSURE CONTROL

Normal blood pressure will help prevent damage to your eyes, kidneys, heart, and blood vessels. Blood pressure should be measured at every routine diabetes visit. Epidemiologic analyses show that blood pressures >120/80 mmHg are associated with increased cardiovascular event rates and mortality in persons with diabetes. Therefore, a target blood pressure goal of <130/80 mmHg is reasonable if it can be safely achieved.

IMMUNIZATIONS

If you have diabetes, take extra care to keep up-to-date on your vaccinations (also called immunizations). Vaccines can prevent illnesses that can be very serious for people with diabetes.

1. Influenza (often called the “flu”) is not just a bad cold. It’s a serious illness that can lead to pneumonia and even death. You can help keep yourself from getting the flu by getting a flu shot every year. The best time to get a flu shot is between October and mid-November, but you can still get your flu vaccination even as late as January.
2. Pneumococcal (pneumonia) disease is a major source of illness and death. It can cause serious infections of the lung (pneumonia), the blood (bacteremia), and the covering of the brain (meningitis). Pneumococcal polysaccharide vaccine (often called PPV) can help prevent this disease. PPV can be given anytime throughout the year and usually is a one-time vaccination unless you have a chronic illness.

Standards of Clinical Care for Children

The following table outlines the type of care children should receive. Very young kids won't need everything (such as eye exams), but older kids, especially teens, likely will. Remember, this is only a guideline.

Care or Service	How Often
Visit with a doctor	Every 3-4 months
Visit with a dietitian	Every 3-4 months
Visit with a diabetes educator	Every 3-4 months
Blood glucose testing	Before meals and at bedtime, at a minimum. The more you test, the better you'll do.
A1C test	Every 3 months
Eye check for retinopathy	Yearly in children 12 or older who have had diabetes for at least five years
Urine test for microalbuminuria	Yearly after five years of diabetes or after puberty
Lipid profile (cholesterol and triglycerides)	Yearly
Height and weight measurements	Every visit
Thyroid functioning	Yearly

For More Information

- "Standards of Medical Care for Patients With Diabetes Mellitus" by the American Diabetes Association.
- "Clinical Practice Recommendations (2002)" of the American Diabetes Association.
- "How to Apply the Experience from the Diabetes Control and Complications Trial to Children and Adolescents?" by Stuart J. Brink discusses the importance of good control in children and adolescents and explains the clinical practices of the New England Diabetes and Endocrinology Center.
- "Medical Guidelines for the Management of Diabetes Mellitus" by the American Association of Clinical Endocrinologists
- "Diabetes Monitor" advises when to refer to an endocrinologist.

References

1. *Understanding Insulin-Dependent Diabetes, 8th Edition* by H. Peter Chase, M.D., 1995, pp. 188-9.
2. *Management of Diabetes Mellitus: Perspectives of Care Across the Life Span* edited by Debra Haire-Joshu, MSEd, MSN, PhD, RN., St. Louis, 1992, pp. 629-30.
3. *The Joslin Guide to Diabetes* by Richard S. Beaser, M.D., with Joan V.C. Hill, R.D., C.D.E., pg. 30.

Source: Children With Diabetes web site at http://www.childrenwithdiabetes.com/index_cwd.htm

Sick Day Rules

Illness is a stress that can lead to poor glucose control in both type 1 and type 2 diabetes. It can frequently lead to ketoacidosis in type 1 diabetes. When a patient is ill, changes in diet, medications, and monitoring may be necessary to maintain stability. The following guidelines are recommended during periods of illness.

I. MEDICATION

A. Patient must continue to take routine insulin (even if vomiting and unable to eat) or oral diabetes medication; may be necessary to switch to insulin temporarily or to change dose, but this is based on glucose test results and on advice from health care provider.

B. Patients taking insulin may require supplemental regular/Humalog insulin every 3-4 hours based on glucose results and advice of health care provider.

II. MONITORING

A. **Blood Glucose:** should be tested at least every 2-4 hours; fingerstick measurements may not be reliable when glucose >400 mg/dl (>22.2 mol/l)

B. **Urine Ketones:** if glucose >300 mg/dl (>16.7 mmol/l), urine should be tested for ketones every 3-4 hours; patient should report moderate to large ketone levels to health care provider

III. NUTRITION

A. **Fluid Replacement:** To prevent dehydration, which may be related to fever, diarrhea, nausea, and vomiting, at least 4-8 oz water or other fluids (sugar-free drinks such as broth, tea, water, diet soda) should be consumed hourly. Broth is good for replacement of salt lost with dehydration. When regular meal cannot be consumed, carbohydrate in meal should be replaced with fluids or soft foods. If individual is nauseated or vomiting, small sips of fluids or ice chips should be taken every 15-20 minute. An antiemetic is often required.

Examples of fluids containing 10-15 grams carbohydrate:

- 1 cup soup*
- 3/4 cup cream soup made with milk
- 1 cup Gatorade
- 1/2 cup fruit juice
- 3/4 cup regular ginger ale
- 1/2 cup regular soft drink

B. **Meal Replacement:** When patient is again able to consume food, small, frequent meals containing 10-15 grams carbohydrate can be taken every 1-2 hours.

Examples of food containing 10-15 grams carbohydrate:

- 1/2 cup sweetened gelatin
- 1/2 cup mashed potatoes
- 1 slice toast/bread
- 1 *regular* double Popsicle
- 1/2 cup *regular* pudding
- 3 graham crackers
- 1/2 cup sherbet
- 1/2 cup custard
- 6 vanilla wafers
- 1/2 cup ice cream
- 1/2 cup cooked cereal
- 6 saltine crackers

*Soup made with broth does not contain carbohydrate and should not be used to treat a low blood glucose reaction.

IV. WHAT HEALTH CARE PROVIDERS SHOULD ASK PATIENT WHEN PATIENT IS ILL

A. **Length of illness**
B. **Glucose and urine ketone levels:** >300 mg/dl [16.7 mmol/l] and moderate to large ketone level)
C. **Presence and duration of diarrhea, nausea, or vomiting** (>4 hours)
D. **Change in body weight since onset of illness**
E. **Any other symptoms** (e.g., abdominal pain)
F. **Fever** (>101°F)
G. **Medications** (dose, times of insulin injections, injection sites, and other medications taken)
H. **Quantity and kinds of food and fluids consumed during day**

V. USE OF INSULIN PUMPS WHEN SICK

Illnesses are treated slightly differently when the patient is using an insulin pump. What needs to be done is dependent on the current blood sugar level. The following are some general guidelines for illness management.

A. During ALL illnesses, blood sugar may be harder to control, so there is a need to test blood sugar more often to maintain good control.
B. It is important to ALWAYS keep some sources of quick sugar available. These will be helpful during sick days if blood sugar is running on the lower side. Regular popsicles and lollipops are suggested (not the sugar-free kind).

Source: "The Diabetes Ready-Reference Guide for Health Professionals". 2000. American Diabetes Association, Inc.

Depression and Diabetes

Just about every child with diabetes feels emotional pain when he or she is diagnosed. This pain is likely to resurface when having diabetes makes it hard to just be a kid. As a result, the children who continue to have the greatest emotional pain from having diabetes often have the most trouble taking care of themselves and controlling their diabetes. This only further fuels their anger, fear, and resentment and can result in even more deeply rooted and lasting emotional turmoil.[1]

Signs and Symptoms[2]

If the student is having any of these problems, it's VERY important to have them talk to their parent, teacher, or other adult:

- Poor grades in school
- A lot of tardiness or absences from school
- Aches and pains that keep the student from doing what he/she wants to do
- Poor concentration
- Being bored
- Loss of interest in friends, sports, or activities
- Difficulty with relationships
- Crying and sleeping all of the time.
- Talk of or efforts to run away from home
- Feelings of sadness or hopelessness
- Increased irritability, anger, or hostility
- Extreme sensitivity to rejection or failure
- Changes in appetite
- Alcohol or substance abuse
- Reckless behavior
- Fear of death
- Thoughts of suicide

Frequency of Depression in Diabetes

- 33% of those with diabetes (type 1 or type 2) experience depression at some point in their lifetime.
- This rate is two to three times higher than that of the general population.
- Depression tends NOT to go away without proper treatment.

Impact of Depression in Diabetes

Depression is associated with:

- Higher risk of disease complications
- Poor blood sugar control

And with other factors that may worsen diabetes:

- Obesity
- Physical inactivity
- Noncompliance
- Substance abuse
- Smoking

Recognizing Depression[3]

The diagnosis of clinical depression requires that nearly every day for at least two weeks:

ONE of the following is present:

- Sustained feeling of sadness, depression, or extreme irritability.
- Loss of interest or pleasure in activities the student previously enjoyed

PLUS

FOUR of the following:

- A change in sleep patterns
- Increased or decreased appetite (With children it is important to note any failure in expected weight gain.)
- Difficulty concentrating
- Fatigue or loss of energy
- Feelings of guilt or worthlessness
- Recurrent thoughts of death or self-harm

References:

1. Wysocki, T, 1997, *The ten keys to helping your child grow up with diabetes."* American Diabetes Association
2. Betschart J & Thom S. 1995. *In control: A guide for teens with diabetes.* American Diabetes Association.
3. *Depression in Children & Adolescents* – A Fact Sheet for Physicians. www.nimh.nih.gov/publicat/depchildresfact.cfm National Institute of Mental Health, NIH publication No. 004744, 2000.

Source: *Depression & Diabetes,* Center for the Study of Depression in Diabetes at Washington University School of Medicine, St. Louis, Missouri